100th Congress
*1st Session*

COMMITTEE PRINT

WMCP:
100-22

## COMMITTEE ON WAYS AND MEANS
## U.S. HOUSE OF REPRESENTATIVES

# RETIREMENT INCOME FOR AN AGING POPULATION

## A REPORT

PREPARED BY

CONGRESSIONAL RESEARCH SERVICE, LIBRARY OF CONGRESS, WITH ANALYTIC SUPPORT FROM THE CONGRESSIONAL BUDGET OFFICE

AUGUST 25, 1987

Printed for use of the Committee on Ways and Means

U.S. GOVERNMENT PRINTING OFFICE
76-424 WASHINGTON : 1987

**For sale by the Superintendent of Documents, U.S. Government Printing Office**
**Washington, DC 20402**

H782-39

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# LETTER OF SUBMITTAL

Congressional Research Service,
The Library of Congress,
*Washington, DC, August 25, 1987.*

Hon. Dan Rostenkowski,
*Chairman, Committee on Ways and Means,*
*House of Representatives, Washington, DC.*

Dear Mr. Chairman: A year ago you asked the Congressional Research Service (CRS) to analyze potential issues facing the retirement income system in the future. Your letter expressed particular interest in the effects on retirement income policies and programs of the coming retirement of the baby-boom generation. This report, prepared by a team of analysts from CRS and the Congressional Budget Office (CBO), responds to your request.

Upon receipt of the Committee's request last summer, CRS contacted CBO to see if it would be possible to enlist the support of analysts from that agency with particular backgrounds needed to analyze the complicated issues raised by your request. Four analysts from CBO joined 10 colleagues from CRS, with both groups participating fully as members of a team that planned the study and carried out its analysis.

The team met regularly during the latter half of 1986 and early 1987, during which time agreements were reached on an overall approach for the project and assignments were made for drafting nine background papers. These papers were then used to prepare an executive summary and an overview of the project. These sections of the report attempt to synthesize the important findings and conclusions of the study, and to formulate an analytic framework for understanding the issues. The background papers formed the foundation for this synthesis, supplemented by team discussions and other sources of information. The report then, consists of three parts: an executive summary, an overview, and a series of background papers.

We hope this report meets the needs of the Committee on Ways and Means.

Sincerely,

Joseph E. Ross, *Director.*

Committee on Ways and Means,
U.S. House of Representatives,
*Washington, DC, June 25, 1986.*

Mr. Joseph E. Ross,
*Director, Congressional Research Service, Library of Congress, 213 Madison Library, Washington, DC.*

Dear Mr. Ross: Last year, the Committee on Ways and Means began a comprehensive review of the Nation's retirement income system. This review was motivated by the Committee's concern about the relationship among the various means for providing retirement income that together make up our national retirement income system, and their adequacy and equity in meeting retirement needs. Future proposals to change social security or tax policy affecting employee benefits and savings for retirement must be reviewed in this broad context.

While we expect the Congress to enact major tax legislation later in this session of Congress, and while there currently are no plans for substantial changes in social security, we realize that these are issues that the Congress must revisit periodically as economic, social, and political situations change. In particular, the retirement of the baby-boom generation may, according to many experts, strain the Nation's ability to provide adequate retirement income for this large cohort, whether these resources come from public or private sector plans. Insofar as possible, the implications of this demographic shift should be taken into account as proposals for legislative changes are considered.

During the current Congress, the Committee began its review of the Nation's retirement income system. The Subcommittees on Social Security and Oversight have held a series of successful and informative hearings—assisted by analysts in CRS's Education and Public Welfare Division. We intend to continue this work in the 100th Congress and are asking CRS to provide continued support to our effort by preparing a report that deals with potential issues of the retirement income system in the future. We would hope such a report could assess the goals of the retirement income system, consider measures of economic status and income adequacy, provide descriptions of the set of programs and policies that make up our current system, and analyze future issues.

This report would provide the Committee with a base line of common data and issue definition, as well as a framework of analysis for the ongoing development of specific legislative approaches to the overall problem of providing retirement income security now and in the future. To be of most use to the Committee, we ask that this work be finished by the end of December 1986.

With warm regards, I am

Sincerely,

Dan Rostenkowski, *Chairman.*

# PREFACE

In the summer of 1986, the Committee on Ways and Means asked the Congressional Research Service (CRS) to conduct a study that would assess the effects of the retirement of the baby-boom generation on the Nation's retirement income system. The purpose of the study was to determine, given the uncertain nature of all data about the future, what could be reasonably said about the system of public and private claims upon the economy that the baby boom is building as it nears old age, and the potential implications for society of honoring those claims in the context of a changing demographic profile.

As expected, such an ambitious study encountered the difficulty of mixing perspectives from different disciplines and subject expertise. While much has been said and written about the baby boom and the effects of its retirment on the Nation's retirement income and health care systems, common understandings about how to frame the issues and how to assess their effects have not been developed. The Committee's letter to CRS specifically asked for a report that "* * * would provide the committee with a base line of common data and issue definition, as well as a framework of analysis for the ongoing development of specific legislative approaches to the overall problem of providing retirement income security now and in the future."

The nature of the study presented difficult conceptual and analytic challenges, and CRS responded with initial steps to supplement its own in-house capabilities. Most importantly, CRS knew that some analysts at the Congressional Budget Office (CBO) had complementary interests and expertise. Upon request, CBO generously made available four analysts to assist in the study. The CBO analysts joined 10 colleagues from CRS to form a team that planned and carried out the study. Team members were committed to the attempt to synthesize the different knowledge bases in the hope that the result might contribute a more adequate understanding of the ways in which the different policy areas would interact over time. Regular meetings, during which vigorous exchanges from the differing perspectives were encouraged, led to decisions on a basic concept for the study, and to identification and assignment of background papers on the major issue areas. These papers were debated at length before the group, and then rewritten, reread and redebated, in some cases several times. In the spring of 1987, the completed background papers served as the basic materials out of which the team created an executive summary and an overview. These synthesizing papers represent the work of the entire team and common understandings reached during a year of study.

Team members included, from CRS: Thomas Gabe, Jeanne E. Griffith, Richard A. Hobbie, David Koitz, Geoffrey Kollmann, Carolyn L. Merck, James Reuter, Ray Schmitt, and Dennis Snook; and from CBO: Robert Hartman, Martin Levine, David Lindeman, and Larry Ozanne.

Edwin Hustead, Senior Vice President of Hay Huggins, Inc., participated in team planning efforts and is a coauthor of one of the background papers.

The project was managed by P. Royal Shipp of the Congressional Research Service.

Seeking viewpoints from as wide a range as possible, the team met with outside experts at informal "brown-bag" lunches that were held during the fall and winter of 1986. Speakers, all of whom provided informative and provactive perspectives, included: Henry Aaron, The Brookings Institution; Karen Davis, Johns Hopkins University; Paul Hewitt and Phillip Longman, formerly with Americans for Generational Equity; Jack A. Meyer, New Directions for Policy; John Palmer, The Urban Institute; and Barbara Boyle Torrey, the Bureau of the Census.

Emily Andrews, Employee Benefit Research Institute, read and provided helpful comments on "Private Pension Plans," Chapter 9 of the background papers.

Production of a report of this size and nature requires a skilled and dedicated support staff. To type the background papers and to make many changes in them all along the way, Flora Dean organized and directed a particularly efficient support team consisting of Tracy Byrd. Denise Carter, Elizabeth Dowdy, Nan Hill, Grover McDonald, and Grace Shao. Mary Anderson accepted the complex challenge of typing the executive summary and the overview with its many changes by multiple authors. The intelligence, hard work, and conscientiousness of the support staff allowed progress from draft to draft with confidence that necessary changes were being made, and that sentences would emerge that were both grammatically and conceptually sound. Vicki Freedman, the project's research assistant, came to the study late, but was a great help in pulling it all together at the end.

## EXECUTIVE SUMMARY

The adage, "demography is destiny," may exaggerate the significance of demographics, but the size, growth, and age profile of a population exert a powerful influence on a nation's economic and social life. In particular, population characteristics strongly influence a nation's policies and programs for providing income and medical care to its retired citizens. The aging of the baby-boom generation will yield an unprecedented number of older, retired persons in the next century, and, therefore, it is appropriate to begin now to review the Nation's retirement policies and programs to determine their adequacy and affordability in the future.

Americans who will grow old between now and the middle of the next century already have been born, but the number who will reach age 65, and how long they will live after that, will depend on the rate of improvements in longevity. For example, alternative projections within a relatively narrow range of assumptions about life expectancy indicate possible differences of up to 30 percent in the projected number of elderly in 2050. The portion of the Nation's resources that will be required to pay for retirement income and medical care for tomorrow's elderly will depend on their numbers, how long they live, and their health in old age.

Two extraordinary demographic phenomena will determine the number of future elderly:

1. High birth rates during the two decades following World War II resulted in a "baby boom generation" that has strained social institutions starting with obstetric wards in hospitals, and continuing through schools, and the job market, to name only a few. The oldest members of the baby boom will reach age 65 in about 2010.
2. At the same time, people have been living to increasingly older ages. Not only do more reach retirement age, but they live longer in retirement.

Although predictions of improvements in mortality rates in the future vary, all signs point to a large increase in the number of future elderly. According to the Census Bureau's intermediate projections, the number of people age 65 and over will increase from 31.7 million in 1990 to 39.2 million at the beginning of the baby boom retirement, with a further increase to 64.6 million after the last of the baby boom has reached old age.

The number of elderly reaching age 85 is growing even faster. People in this age group disproportionately suffer from chronic illnesses requiring long-term nursing home or other care, often do not have a spouse to help care for them, are disproportionately women who were not in the labor force in earlier years, and often are poor.

These demographic facts have caused many experts to express concerns about the Nation's capacity to provide retirement income and medical care to the future elderly at levels comparable to today's, while simultaneously meeting other needs of society. This study examines these concerns and provides a framework for understanding policy choices in the future.

## I. Building Claims for Retirement Income

The Nation's system of retirement income is based on the concept of building claims during a lifetime of work for income to be received upon retirement. By the time workers are eligible for retirement, they have accumulated claims for income from social security and employer-sponsored retirement plans. These systems pay benefit amounts determined by contribution and benefit formulae that vary amounts of retirement income according to length of time worked and levels of earnings while working. Furthermore, individuals save for retirement through investments, including homeownership, that are separate from their employment settings. In fact, retirement income from these sources typically exceeds income from pensions and other employer-sponsored plans. In summary, workers' savings and productivity during their working lives contribute to the capacity of the economy to produce goods and services, and their future claims for retirement income ultimately stem from that antecedent work and savings.

Benefit formulae for retirement income are designed so that the size of claims created during a worker's career varies with the rate of growth of productivity, as reflected in increased real wage rates. During periods of rapid productivity growth earnings generally rise rapidly also—leading to correspondingly large retirement income claims. On the other hand, if rates of growth of productivity are slow, the size of income claims created will be correspondingly lower. The relatively high retirement benefits enjoyed by today's retirees can be attributed to their participation in the strong productivity growth years of the 1950s and 1960s. In contrast, low productivity growth in the 1970s and 1980s will reduce the rate of growth of retirement income for workers retiring in the future.

While productivity changes during a cohort's working lifetime determine its relative prosperity, even modest rates of economic growth over a long period of time will yield higher retirement income claims (in real dollars) than received by today's retirees. For example, if the rates of economic growth assumed by the intermediate projections of Social Security's Board of Trustees prevail until 2010 (the beginning of the baby boom's retirement), social security retirement benefits in that year will be about 25 percent higher in real dollars than they are today.

## II. Paying for the Baby Boom's Retirement

Just as the number of elderly can be predicted to grow rapidly, particularly during the years of the baby boom's retirement, so also can the cost of paying their retirement income and medical care benefits. Analyses of the financial adequacy of social security and pension programs that compare the number of elderly to the working age population (often called "dependency ratios") suggest that there will be an economic strain as the elderly compose an increasingly large segment of the population in the future. These measures, however, can be misleading. They suggest that the elderly are "dependent" on the working-age population when, in fact, both workers and retirees have claims against the productive capacity of the economy—an economic base built up by labor and capital over the years. Measures of "dependency" that compare actual workers to those not working might better indicate the potential degree of societal dependency—and they too rise in the future. However, even these measures ignore important variables such as economic growth and productivity improvements. Dependency ratios are not economic measures, and by themselves do not reflect the ability of society to care for its dependent populations. Comparing projections of total benefit payments to the gross national product (GNP) over time shifts analytical attention from potentially misleading "dependency ratios" to an assessment of social security benefits in the context of the overall economy.

In 1983, social security payments reached 5 percent of the GNP—its highest level to date. By 1987, this percentage had declined to 4.73 percent, and the Social Security Board of Trustees' intermediate projection shows continued decline over the next two decades to 4.25 percent in 2005. This decline reflects the large number of baby-boom workers in the labor market and the relatively low number of retirees born during the depression years of the 1930s. Then, however, as the population ages and the baby boom begins retiring, the cost of providing their social security benefits will grow by 53 percent over a 30-year period, reaching 6.5 percent of GNP in 2035. Under the Trustees' optimistic assumptions, the percent in 2035 would be 5.32 and under the pessimistic assumptions it would be 8.33. (The difference between these optimistic and pessimistic projections results from making long-run assumptions for highly variable and uncertain economic and demographic conditions. Possible rates of future productivity growth, labor force participation, birth rates, and longevity improvements vary widely.) It should be noted, however, that this increase in GNP share of 2.27 percentage points is smaller than the retirement cost percentage increase from 1950 to 1980.

The cost of furnishing medical care to the future elderly also will be affected by each of these uncertainties, and by an added one. Medical care expenses in the United States (for elderly and nonelderly alike) have increased at rates substantially greater than growth in the economy. As a percent of the GNP, the cost of overall medical care has increased from 5.9 percent in 1965 to 10.9 percent in 1986. If trends from 1974 to 1984 should continue into the future, this percentage would increase to over 15 by the year 2000. Medical care expenditures as a proportion of the GNP have grown because of increases in population and in average per capita cost of treatment. More expensive treatments accounted for one-half of the total increases above the level of general inflation during the past 10 years, with increases in population accounting for one-sixth. As the population ages, demographic changes will account for a larger source of expenditure growth because the elderly use much more medical care services than the young. The potential for continued increases in medical care expenditure is high. If, while the number of elderly increases, average per capita cost also rises, annual growth in medicare expenditures could exceed the rapid growth rates in the past.

Thus, as the population ages and the baby boom retires, benefit payments for social security and medicare will grow. In addition to concerns about the costs of paying for these benefits, the means used to finance them have been controversial in the past and likely will be in the future. Social security (and the hospital insurance part of medicare) historically have been financed by a payroll tax, while the part of medicare that pays for other medical services is financed from general revenues and premiums. During the next 25 years current law over finances social security and under finances medicare. Accordingly, financing techniques of these Federal programs, will generate policy and legislative concerns even before the baby boom retires.

Major social security amendments enacted in 1977 and 1983 reinforced social security's short-run and long-run financing. These amendments included reductions in benefits and increases in social security's payroll tax to take effect in 1988 and 1990. The combined payroll tax (on both employees and employers) will climb to 12.12 percent in 1988 (from 11.4 percent in 1987) and further to 12.4 percent in 1990. These payroll tax increases will take effect at the very time that social security benefit payments (compared either to the GNP or to total taxable payroll) begin a two-decade decline. During these 20 years, revenues from social security's payroll taxes will exceed benefit payments by large amounts, thus building up social security's trust fund balances to unprecedented levels (a high point of $2.6 trillion in 2022, in 1987 dollars). This trust fund buildup, if permitted to happen, would occur before and in anticipation of the baby boom's retirement. Its potential effect on the economy is being brought under close analytical scrutiny, so far with varying conclusions. The financing plan adopted in 1983 would generate payroll tax revenues that would either help finance other Government operations or reduce the national debt held by the public while the trust fund is building up. Then, during subsequent years of trust fund decline, other sources of Government revenues (including Federal borrowing) would be required to help finance social security as the debt held by the trust funds is redeemed to pay current benefits.

To some extent, Federal borrowing may be tolerable in the baby-boom retirement period, but only if budgetary surpluses (measured over all Federal activities) have been previously created. This strategy also implies export surpluses before and import surpluses during the baby boom's retirement. One alternative to this financing plan would be to peg the payroll tax more closely to the annual outlays of social security, which would mean that the payroll tax rate would actually decline during the next 20 years, and then increase steadily for the 30 years after that. Another alternative would be the explicit infusion of general revenues into the system, particularly during the peak years of the baby boom's retirement. In any event, resources to pay for the baby boom's retirement will come from economic production, and ultimately will be assessed as a portion of society's resources, at that future time.

The prospect of an unprecedented buildup in social security trust funds is joined by equally unprecedented changes in the economy.

Social security reached maturity in a U.S. economy that was not very dependent on foreign trade, an economy that was predomiant in most commercial activities, whose currency was the world's standard. American saving financed American economic growth. All that has changed. Policy analysts are just beginning to explore the implications of worldwide capital markets, of service industry economies, of our Nation's new position as premier debtor. Surely all aspects of Government finance—including how we pay for retirees—will be influenced by such emerging studies.

These same factors affect retirement claims that workers accumulate in the private sector through employer-sponsored plans or through their own savings, including homeownership. As with social security, the accumulation of private retirement wealth depends on underlying trends in employment and productivity during the period of accumulation. So too, the final value of retirement wealth depends on the capacity and willingness of society in the future to honor the contracts and debt instruments in which that wealth is embodied.

## III. INCREMENTAL ADJUSTMENTS TO ACCOMMODATE THE BABY BOOM'S RETIREMENT

People born during the baby-boom years currently are in their early 20s to early 40s. It is possible to predict with considerable confidence the number who will reach old age and how long they will live afterward. Estimates of the cost of paying their retirement income (as a percent of the GNP or of taxable payroll) will likely fall within a somewhat wider range, but this too, given additional uncertainties of estimating future economic and social conditions, can be projected with some confidence. It is clear that if currently projected economic and social conditions do in fact come about, spending on the elderly will increase. In that case, for example, the cost of social security, in relation to the GNP, increases by 53 percent over a 30-year period. Beyond these "facts," however, the crystal ball clouds over. Instead of attempting to predict what might happen, this study emphasizes ways the public and private sectors might adjust to changing demographics. Market conditions, democratic political institutions, and Government policies all adjust incrementally to changing conditions. In fact, there is substantial time for such adjustments; the oldest of the baby boom does not reach age 65 for nearly one-quarter of a century. Furthermore, the baby boom doesn't reach old age all at once, but gradually over two decades.

Given these time horizons, the Congress could consider proposals to reduce or increase the level of social security benefits as it sees the necessity for doing so. Until the mid-1970s, Congress consistently increased benefits for future social security recipients, but since the mid-1970s has reduced them. Most recently the 1983 amendments reduced benefits both in the short and the long run. Long-run changes included delaying eligibility for full social security benefits from age 65 to 67, and increasing benefits for those who continue to work beyond the age for social security retirement.

Actions to reduce levels of retirement income going to those already retired cannot ameliorate any "burden" caused by payment of retirement income claims to future retirees. Cutting current benefits could (although it is arguable whether it would) increase national savings, perhaps leading to economic growth. But many other, far less ambiguous, fiscal policy methods are available to achieve additional national savings if that is determined to be an important national goal.

Rates of economic growth far in the future are impossible to predict with any degree of confidence. National policy goals undoubtedly will attempt to encourage high levels of economic growth as far into the future as one cares to project. And it would seem highly likely that the steady buildup of social security costs after 2005 would be easier to absorb in an economy that is growing rapidly, even though economic growth alone would affect the cost of social security compared to GNP or to taxable payroll only marginally. If slow economic growth should persist, the value (and hence the "burden") of retirement income claims would be correspondingly lower than in a fast growth scenario.

Official projections assume that past trends for early retirement will continue into the future. However, projections represent mainly extrapolations of past trends. Analysis shows a strong relationship between levels of retirement income and the decision to retire. In other words, increases in retirement income during the past 20 years are associated with the trend to early retirement. From 1967 to 1984, overall levels of retirement income grew by 140 percent in real terms. In addition, during that time period, the sources of retirement income showed significant shifts. Social security (at about one-third) and pensions (at about one-seventh) maintained about the same share of the total. But the proportion that came from earnings declined sharply from 1967 to 1984, and the proportion from financial assets accounted for a correspondingly larger share in the later year. Recent retirees worked during years of rapid economic growth, and not only did their retirement income claims from social security and pensions grow, but they were able to accumulate financial assets. Furthermore, these financial assets generated large amounts of income when interest rates were high during the late 1970s and early 1980s. If slow economic growth (and accordingly, relatively lower retirement income) characterizes the future, those approaching old age might stay in the labor force longer, particularly since the baby boom is followed by a "birth dearth," which may result in greater demand for workers in those years.

In summary, the number of elderly persons will increase rapidly in the future, both in absolute numbers and as a proportion of the population. Claims on national and Federal budget resources for paying retirement and medical care benefits will rise correspondingly. The largest increases will occur when the baby boom reaches old age, starting 25 years from now and continuing over two decades.

One way for the Nation to ease the burden of providing for the baby boom's retirement is to build up the Nation's productive capacity over the next quarter century. By so doing, real GNP (per worker) would be high enough to offset the expected decline in the workforce relative to the retired population, providing adequate real income for both groups. To achieve this buildup, national policy should tilt toward, or at least not deter, a high investment economy in the period from now to 2010. This would require increases in saving and productivity growth because both are below historical rates at a time when, to prepare for the retirement of the baby boom, above-average rates appear warranted. Among policies to raise saving, increased saving by the Federal Government (in the form of reductions in the budget deficit) is the most likely to have a major impact. Policies to raise private saving may also be helpful but cannot be counted on to have a major effect.

Beyond this, policies regarding social security, private pensions, and medical care for the elderly will be reviewed periodically between now and the time when the baby boom reaches old age. Social security financing issues will be on the national policy agenda because of increases in payroll tax rates scheduled for 1988 and 1990 and the potential huge trust fund buildup. Medicare's hospital insurance financing is badly out of balance and may require legislative adjustments within the next decade. In addition, other issues of medical care coverage and cost will occupy an important place on the national agenda in the decades before the baby boom's retirement.

Debates over national policy toward private retirement savings also will no doubt continue. Employer-sponsored pensions and similar retirement plans are highly tax-favored, but the efficacy and distribution of those tax advantages will always be a matter of tax policy debate. The funding of defined benefit pension trusts and the ownership of those assets are similarly matters of continuing debate. The effects of job mobility on pension accumulations, and vice versa, may become a source of even greater policy scrutiny as the consequences of the integration of the United States into a larger global economy become more apparent. The need for more flexible and less job-dependent retirement savings may increase the demand for defined contribution plans in the context of employer-sponsored pensions and for more purely individual savings. These possibilities may reinforce Government involvement in the insurance of individual savings and may arouse renewed interest in proposals like inflation-indexed Government bonds.

Over this period, the size of retirement income claims and sources of retirement income will adjust automatically to economic forces. If economic growth is high, retirement income claims will be large and current early retirement trends may continue. On the other hand, if economic growth rates are lower, retirement income claims will be lower. The elderly may have to choose whether to retire with a lower standard of living than they would have achieved under more favorable economic conditions or to work longer. Earnings could become a greater source of income received by the elderly—as they were only two decades ago.

In the final analysis, a worker's retirement claims are only as good as the Nation's economic well-being and its traditions of obligation and trust. If the United States and its economic partners can successfully manage the global economy, and in the absence of conflicting priorities of overwhelming urgency, incremental policy changes emerging from future political debates should be sufficient to accommodate the coming demographic shifts.

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# PART I

# RETIREMENT INCOME FOR AN AGING POPULATION: AN OVERVIEW

# PART 1. RETIREMENT INCOME FOR AN AGING POPULATION: AN OVERVIEW

## I. INTRODUCTION

### A. PURPOSE

The average age of the U.S. population will increase by 24 percent and the number of elderly will grow by 53 percent during the next 30 years. Steadily declining birth rates and increasing longevity underlie this long-term demographic shift, which is common to all developed societies. In addition, the baby-boom, baby-bust cycle of the post-war decades highlights issues faced by countries as they move to a higher ratio of aged to nonaged.

Concern has arisen about the effect of population aging on the Nation's capacity to support its retirees while meeting other national goals. To help it consider the advisability of actions to ease the transition to an older society, the Committee on Ways and Means asked the Congressional Research Service (CRS), with support from the Congressional Budget Office (CBO), to develop an analytic framework for understanding the implications of the aging of the population and the baby boom's retirement for Federal programs and policies. Specifically, the Committee asked for a report that would: (1) provide a baseline of common data and issue definition, (2) assess the goals of the retirement income system, (3) measure economic status and income adequacy, (4) describe the set of programs and policies that make up our current system, and (5) analyze future issues. The Committee noted that, so far as possible, it intends to take account of the implications of this demographic shift as it considers proposals for future policy and program changes.

This report responds to the Committee's request by providing this overview of the subject, and a series of background papers.

### B. BUILDING BLOCKS FOR AN ANALYTIC FRAMEWORK

Analytic frameworks consist of data and analysis, organized around central concepts with an organizational structure that integrates them. This overview, and the background papers that follow, constitute such an analytic framework. The overview draws heavily on the background papers and on discussions about them held periodically during the past year by a team of analysts from CRS and CBO.

As the study proceeded, general understandings were reached on important concepts that structured the dialogue, undergirded much of the analysis, and focused many of the conclusions. These concepts are implicit throughout the report—in both the overview and the background papers. They are made explicit here because of their significance to the study. These basic concepts include how claims for retirement income are created, the role of economic growth, the limitations of projected data, the way economic and government institutions respond to changing conditions, and some approaches to defining dependency and burden as these terms are used in discussions about the aging of the population and the retirement of the baby boom.

*1. Building Retirement Income Claims*

The foundation of the report's analytic framework is the idea that during a person's lifetime of work, by virtue of this work and through saving, various private and public retirement income claims are created. Retirees, who no longer have income claims based on their current work, can begin to draw on their accumulated claims for retirement income. (These work-related claims are supplemented by legislatively established minimums that provide income to individuals who reach old age without sufficient claims based on prior work.)

Although retirement income claims build up over a work career, their future value can only be projected based on assumptions. The rate of economic growth during the working life, notoriously unpredictable, will largely determine the value of these claims. If moderate growth rates (the so-called II-B assumptions from Social Security's Board of Trustees) [1] persist over the next quarter century, most of the elderly (and also the nonelderly) will have real income far in excess of current levels. On the other hand, slow or no economic growth is a recipe for social strain—and not just over retirement income.

*2. The Role of Economic Growth*

The report highlights the role of economic growth. In the first place, even moderate rates of economic growth, if consistent, over a 25-year period will substantially raise standards of living and increase national wealth. For example, assuming the rate of economic growth in the Social Security intermediate projections, average annual wages (in real dollars) will increase by 35 percent over the next quarter of a century from $18,135 at present to $24,546 in 2010. It seems plausible that accumulated claims for retirement income (from social security, pensions, or financial assets) will more likely be honored in full if society's overall wealth is steadily increasing.[2]

The value of claims for retirement income from a variety of sources is determined in large part by economic growth. For example, using Social Security's intermediate assumptions, the value of a social security retirement benefit (in real terms) in 2010 is projected to be substantially greater than today, largely because of the effect of real growth on wages. The value of private pension claims also is tied to the real economic growth. Although there are few long-run projections of income from all sources for future retirees, those currently available assume positive rates of economic growth and accordingly show robust increases in real retirement incomes. If these assumptions are incorrect and favorable growth rates do not materialize, future levels of retirement income will be correspondingly less.

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[1] Annual reports from the Board of Trustees of the Social Security system project social security expenditures, revenues, and trust fund solvency for 75 years in the future. The Trustees present four different projections that differ because of relative "optimism" or "pessimism" regarding their economic and demographic assumptions. Alternative I is based on the Trustees' optimistic assumptions and Alternative III the pessimistic assumptions. Alternative II-B is an "intermediate" projection and is the one most often used to describe the system's actuarial balance. Most data in this report are based on the II-B assumptions. They will simply be referred to as intermediate projections.

[2] Economic growth is important, and the report highlights it. However, it should not be seen as a panacea and its effect should not be exaggerated. For example, if real wage growth averaged 2.5 percent per year, an average not sustained since the 1950s, rather than the 1.5 percent assumed in Social Security's intermediate projections, the cost of social security as a percent of taxable payroll over the next 75 years would only be 11 percent less. See section VI of the overview and chapter 8 of the background papers for a more comprehensive discussion of this point.

The report emphasizes the widely accepted link between increased savings, increased investment and growth. Thus, increasing saving (thereby reducing consumption) over the next 25 years should increase national wealth. The increased saving would support greater investment in private and public capital (both physical and human) and in domestic and foreign enterprises. Fiscal policies to reduce consumption, especially those that reduce the Federal deficit, are the most likely to raise the national saving rate (above what would otherwise have occurred). As discussed in section III and in chapter 4 of the background papers, policies to pre-fund retirement income claims would increase national savings, but only to the extent that the new savings were not offset elsewhere in the economy. Currently, the large Federal budget deficit is reducing national saving, and international borrowing is increasing our future obligations for repayment. Both will likely add to the challenge of financing the baby boom's retirement income claims.

### *3. Analysis Using Statistical Projections*

Policy analysis implies assessment of the future and often relies on relevant statistical projections. Projections of future demographic and economic conditions may be grounded in empirical facts and research, but they are driven into the future by assumptions that are sensitive to changes in complex behavioral relationships. As rigorous as the projections may be, they remain merely projections, and the farther into the future, the more variable the effects of the assumptions and the more speculative the projections become. To illustrate, concerns about the effects of the baby boom's retirement should be tempered by noting that the oldest baby-boom cohorts do not reach age 65 for nearly another quarter of a century.

Nonetheless, analysis of program and policy issues in the future is required, and objective projections do facilitate policy debate. For statistical data on future economic and demographic conditions, this report relies on standard projections by the Bureau of the Census and the Department of Health and Human Services (HHS). However, the report does not focus on the projected data, but uses them as a backdrop that can prompt analytic insights.

### *4. Incremental Public and Private Response to Changing Incentives*

Democratic and market institutions are designed to be flexible in their response to changing and unanticipated conditions. The capacity for flexible response is important, not only because projections so often miss the mark, but modifications in current programs and policies may be called for as the future unfolds. If the institutions work smoothly, required responses to future problems identified with the aging of the population and the retirement of the baby boom will be identified systematically and debated as the issues arise. The levels of productivity and consumption, investment and saving, and work or retirement will change as economic circumstances evolve. Similarly, governmental policies about the distribution and adequacy of income and program benefits, of incentives and regulation, will be modified incrementally as conditions warrant.

This is not to say that Congress should be unconcerned about possible means for preparing for the future and the need to accommodate an aging population. On the contrary, this report creates a framework to understand the relationship between current issues and long-run conditions. The resolution of current issues unavoidably has future effects and policymakers try to anticipate them.

### *5. Dependency and Burden*

Dependency and burden, often not rigorously defined, are used in discussions about retirement income policies and programs. This report uses these terms, but attempts to define them and point out their weaknesses and strengths in understanding the implications of the aging of the population and the retirement of the baby boom.

*a. Dependency.*—Section II of the overview and chapter 3 of the background papers analyze commonly used measures of dependency. These analyses conclude that use of these measures raises serious definitional and methodological issues. For one thing, analyses based upon measures of dependency imply that only the working groups of the population have primary claims on the production of the economy, and that groups not currently in the workforce are "dependent" on the workers. This type of analysis runs the risk of overlooking the legitimacy of the claims built up by retired groups who through their lifetime of work and saving contributed, along with previous generations, to the capital base that provides income to working and retired people alike. The productivity of the working groups is, in part, a function of this capital base, including physical capital and human capital. This overall capital base is built partly by the work and saving of previous generations, and, in conjunction with the labor of the current workforce, accounts for the economy's productivity.

Dependency measured simply as the ratio between workers and retirees has been used to measure the nature of the problem of the baby boom's retirement, but this simple ratio overlooks the potential of improving economic productivity by a shift from labor to capital should that become necessary.

*b. Burden.*—This report offers no definitive account of any "burden" that might result strictly from the demographic shift. Regardless of the legitimacy of retirement claims built up over a lifetime of work and regardless of the intervening growth of the economy, all demographic signs point to a major increase, taking place between approximately 2010 and 2035, in the proportion of the population that is elderly. When that shift occurs, the share of the Nation's productive capacity needed to provide income for the elderly will increase substantially. In that sense it will constitute a "strain" or a "burden" on the economy.

Sections IV and VI of this overview and chapter 8 of the background papers discuss projections of this demographic shift and present measures of its effects. Each year, the Social Security Board of Trustees projects the financial condition of the Social Security programs. These projections show, based on current law, what the cost of the Social Security programs will be in future years as a percent of total "covered payroll" (the proportion of national income upon which payroll taxes are levied), and as a percent of the gross national product (GNP). Using the GNP measure, for example, social security payments as a percent of GNP will rise from 4.44 percent at the beginning of the baby boom's retirement (roughly 2010) to 6.51 percent at the end (roughly 2035)—an increase of 47 percent over a 25-year period. (The cost as a portion of covered payroll shows an increase of 62 percent.)

This demographic fact of life cannot be avoided. However, this report makes the following points:

—The baby boom has "strained" the Nation's governmental and private institutions since its beginning 40 years ago, from hospital pediatric wards, to schools, to the workplace. So far the institutions and the economy have adjusted. If, in the year 2010, the economy is suffering severe dislocations, they may be caused by other serious problems, rather than from the elderly status of the baby boom's oldest cohort. After all, the entire baby boom does not become elderly all at once, but over two decades.

—If, as the baby boom's retirement approaches, and while it is going on, Congress identifies changes that are needed in retirement income policies and programs, it has a number of options that can be put in place as their need becomes more clearly seen. (Section VI and chapters 8 and 9 of the background papers discuss some of these.)

—To some extent baby-boom retirement problems are self-adjusting. If the economy grows more slowly than the intermediate projections, the value of built-up retirement claims will automatically be less. Furthermore, as pointed out in section V below and in chapter 6 of the background papers, recent trends to younger retirement ages seem sensitive to levels of retirement income. From 1967 to 1984, the earnings of the elderly dropped significantly as a source of their income, replaced by income from financial assets. Substantially lower retirement income claims may lead to a return to greater earnings among the elderly.

—The effectiveness of ameliorating any future "burden" on the economy by actions taken now to reduce the rate at which these retirement income claims build up, or actually to reduce them to current retirees, is questionable. Proposals to reduce social security benefits of nonpoor beneficiaries, for example, could be defended on the grounds of more equitable treatment of today's retirees vis-a-vis today's workers, many of whom have suffered a reduction in real earnings. But reductions in today's social security benefits would ease the transition to the higher cost rate required between 2010 and 2035 only if such reductions led to increased national savings and these savings to increased investment and growth. Furthermore, reductions in today's benefits would bring about a further increase in Social Security's trust fund buildup, which raises issues of its own as discussed in section VI below and in chapter 8 of the background papers.

—This report does not focus on the meaning or measurement of the term "intergenerational equity." Instead, the report develops other measures and concepts that are thought to be more useful in understanding the implications of the aging of the population and the retirement of the baby boom.

### C. SUMMARY

The structure and content of the overview and the background papers provide a graphic representation of the report's analytic framework. Following its introduction, this overview is divided into six parts:

#### *Demography: The Backdrop*

Understanding and defining issues of population aging and baby-boom retirement requires, first of all, an appreciation of demographic data. Statistics about population growth and characteristics are used to assess past trends and future projections. Section II reviews historical demographic trends that have led to the steady aging of the population in this century and considers major effects of the baby boom, an aberration in long-term trends, on the demographic characteristics of the population. This demographic perspective sets the stage for consideration of future retirement income policies.

The projections depend importantly on assumptions about birth rates, mortality improvements, and immigration policy. If mortality assumptions used by the actuaries who estimate the number of beneficiaries of various public programs in the future underestimate longevity, unanticipated increases in the elderly would strain not only the cash income support systems, but probably the medical care systems as well because the elderly, particularly those over age 85, are heavy users of medical care services. This strain may be offset somewhat because retirement income claims generally are not increased after benefits begin to take account of economic growth. In fact, some of these claims do not even keep pace with inflation after retirement.

Demographers have developed the concept of dependency ratios, referring to the relationship between the number over age 65 and those age 20–64 (the working-age population). Section II shows this to be an inadequate measure of dependency because it does not take into account the flexibility of the economy and the capacity of potential workers of any age to adapt to changing conditions. Conclusions about the effect of the baby boom's retirement on the economy drawn solely from simple dependency rate analysis may be misleading.

### *Preparing for the Retirement of the Baby Boom: Saving and Investing*

The economic imperative is as important to the future of retirement income policy as the demographic imperative—and more difficult to project. Section III of the overview discusses the impact of saving and economic growth on the baby boom's future retirement income.

The uncertainties in projecting changes in population pale beside difficulties in projecting future economic performance—especially for periods far in the future. (The oldest members of the baby boom will not reach 65 until 2010, nearly a quarter of a century from now.)

Improvements in retirement income during the past 40 years attest to the importance of economic growth. Relatively high levels of retirement income enjoyed by many of today's retirees were produced by the relatively rapid real wage growth during the working years of today's retirees. Anemic real wage growth during the 1970s and so far into the 1980s, years when many of the baby boom began their work careers, will, if continued into the future, slow the growth of retirement income and make harder the task of providing their income in retirement.

### *Federal Policies and Roles in Retirement Income*

Federal retirement income policies and programs appeared and developed in the 20th century. Debates over the need for pensions and social insurance began before the turn of the century, but only in the 1920s were teachers, Federal employees, and some private sector employees covered by pensions. Still later, in the midst of the Great Depression in 1935, social security established a floor upon which additional sources of retirement income could build. Three decades after that, the Congress enacted health insurance for the elderly; in 1974 it passed legislation to broaden Federal regulation of private pensions.

Over the past 50 years, Federal retirement income programs have matured, Federal policies have evolved, and Federal expenditure levels have grown. Federal policies have dominated retirement income provisions and their effects are seen in the Federal budget, both as direct expenditures and as tax subsidies. The growth and projected future size of these expenditures and subsidies are large in dollar terms and as a percent of the budget. When viewed as a percent of the GNP, however, they seem more manageable. For example, social security expenditures as a percent of GNP have increased from 2.52 percent in 1965 to 4.79 percent in 1984. If the intermediate demographic and economic assumptions of Social Security's Board of Trustees hold true, social security payments will rise to 6.51 percent of the GNP by the year 2035, the peak of the baby boom's retirement.

Federal policies for retirement income programs have evolved during this century. These policies, which have influenced program structure and legislative debates, derive from goals for providing retirement income that ranges from that sufficient to provide (1) a minimum level of benefits, to (2) a standard of living after retirement that is roughly consistent with the standard of living while working.

In carrying out these policies, two principles of cost and risk influence policy decisions: (1) lower-income retirees receive relatively higher benefits compared to their income while working than do higher-income retirees, and (2) the Federal Government ensures, to the extent possible, that claims for retirement income are honored.

### *Influence of Income on Retirement Patterns*

In recent years older Americans have been financially better off than ever before and have been retiring at younger ages, a trend that raises questions about the potential size of the nonworking, retired population when the baby boom approaches their 60s. Section V reviews the economic status of the elderly, the income sources and amounts available to today's retirees, and addresses the prospects for the baby boom's economic status in retirement.

Early retirement became feasible for today's elderly because of rapid growth in social security and other employment-related retirement income. Strong economic growth from the end of World War II until the mid-1970s established the foundation for these benefit increases and also permitted today's retirees to build up substantial levels of other financial assets.

In contrast to today's retirees, the baby boom, since its entry into the labor force in the early 1970s, has seen much lower and more sporadic real wage growth. Unless current projections (for example, in Social Security's intermediate assumptions) for a return to sustained favorable economic conditions are borne out, today's young workers may approach retirement in a relatively less favorable position than their retired parents. One way to offset this bleaker retirement outlook, should it materialize, would be for the baby boom to reverse a 40-year trend by delaying retirement and working longer.

### *Building Claims for Retirement Income*

Retirement income consists of claims, accumulated during working careers, which are then redeemed against the economy in retirement. Section VI examines how those claims are created and enforced in both the public and private sectors. If the economy grows at the rates of the intermediate Social Security assumptions, projections of social security and private retirement income sources indicate that most of today's workers will have a standard of living in retirement that approaches pre-retirement levels and is substantially higher than that of today's retirees.

Social security is, and is projected to remain, the largest source of retirement income, and it constitutes the largest domestic commitment of the Federal Government. Consequently, its long-term funding dominates discussions of the baby boom's retirement. Current policy commits the Federal Government to funding the baby boom's social security benefits in a way that, at the least, will affect the Nation's tax structure over the indefinite future. In addition, if social security trust fund surpluses are built up in the context of a relatively tight overall fiscal policy, they could significantly affect national savings.

Despite concerns about funding methods, the fiscal implications of either current funding policy or its alternatives may be largely independent of the particular mechanisms. Accordingly, it also is important to consider projections of social security as a share of the total economy. Compared to GNP, the program's projected increase is within the range of change that the Nation has previously accommodated, both in the size of the overall Federal budget and shifts in its major components. Issues concerning the distribution of benefits in social security have emerged in the past and can be expected to in the future. These benefits distribution issues, which may be raised independently of the baby boom's retirement, are likely to figure into debates of how to accommodate the increased costs of that retirement.

Private retirement claims involve Federal tax policy, Federal guarantees, and fair dealing in the labor market. The baby boom's private retirement claims are subject to many uncertainties. Some of these uncertainties relate to underlying economic conditions, others to various risks that all workers, whether in the baby boom cohorts or not, encounter in accumulating private retirement claims. In particular, investment risks, inflation, employer choices, and job mobility (particularly in an inflationary environment) can affect individual outcomes. As a result of these factors, payments from pensions and similar plans are concentrated among higher-income workers; however, the degree to which those payments represent additional retirement or national savings remains unclear. Also, the tax advantages of qualified plans are more valuable to some workers than others, a matter which increasingly has occasioned debates over tax equity. Finally, future choices about retirement policy increasingly will affect, and be affected by, the economic choices the United States will be facing as its economy becomes more interdependent with the global economy.

### *Aging, Health, and Medical Care*

Payment for medical care may be an exception to the conclusion above about the future capacity to maintain living standards. Section VII considers this issue. Rapid increases in the cost of medical care during the past two decades, and prospects for continuing increases—along with continuing concerns about gaps in medical care coverage—have created major policy issues that the Congress currently is considering. In fact, medical care issues, including some that directly affect the elderly, could be on the congressional agenda indefinitely. For example, at this writing, the House has passed and the Senate Committee on Finance has reported out legislation that would place a ceiling on elderly out-of-pocket expenditures for hospital care. However, this legislation does not include provision of long-term home and nursing home care required by many of the elderly who, as they age, suffer from chronic ailments that often worsen and for which cure seldom is possible. With ever-increasing numbers of the elderly age 85 and older, providing insurance for this kind of medical care (not now covered by medicare) will stimulate legislative attention.

If expenditures for medical care continue to increase faster than the economy grows, the ability of the elderly (whose overall incomes often do not keep pace even with inflation, let alone economic growth) will be more vulnerable to medical care expenditures not covered by medicare. Furthermore, continued cost escalation would inevitably drive medicare's hospital insurance trust fund into long-run imbalance. Trust fund balances would expire in the year 2002 according to the most recent estimates of Medicare's Board of Trustees. These increasing costs will be driven by continued growth in the volume of treatment. To hold down on costs, it may be necessary to regulate increases in treatment volume, a very controversial solution.

## II. DEMOGRAPHY: THE BACKDROP

Despite variations in projections caused by different assumptions, all population projections point to the aging of the U.S. population. This general conclusion provides an important reason to examine current policies. At the same time, spelling out the demographic profile that leads to that conclusion will create a context within which those policies can be examined. As time passes, and more demographic knowledge is gained, the projections will be altered along with the profiles that follow from them. Policies, too, will be evaluated and modifications to them debated. This section examines how current policies might be affected by the everchanging demographic context in which they operate.[3]

### A. THE AGING OF AMERICA

### *1. The Baby-Boom "Bulge" in a Long-Term Trend*

The baby boom of the mid-1940s to mid-1960s will lead to more elderly in the second and third decades after the turn of the century. Yet, the aging of the baby-boom is part of a longer term aging trend that can be traced back well before the high birth rates of the baby boom; this longer trend was partially disguised when the boom was in the younger years of its life cycle.

The size of the elderly population—all persons 65 and over—has increased and will continue to do so. From the beginning of this century until 1980, the elderly population has grown at a rate nearly twice as fast as the total population. Over the next several decades the growth will continue at a rapid pace, as the elderly population more than doubles between 1980 and 2020. The size of the very old population (persons 85 and over) will grow even faster, and the rate of growth will accelerate as the baby boom reaches that age. Between 1980 and 2020, an estimated 4.9 million very old persons will be added to the population, but between 2020 and 2060, as the baby boom becomes very old, 8.3 million will be added. (See figure 1.)

It is important to put this increase in the number of elderly in an historical perspective. The anticipated growth of the elderly population, while rapid, is not unprecedented. In 1980, the elderly population was nearly four times as large as it was 50 years earlier. In comparison, the elderly population in 2030 is expected to be 2.5 times as large as in 1980.

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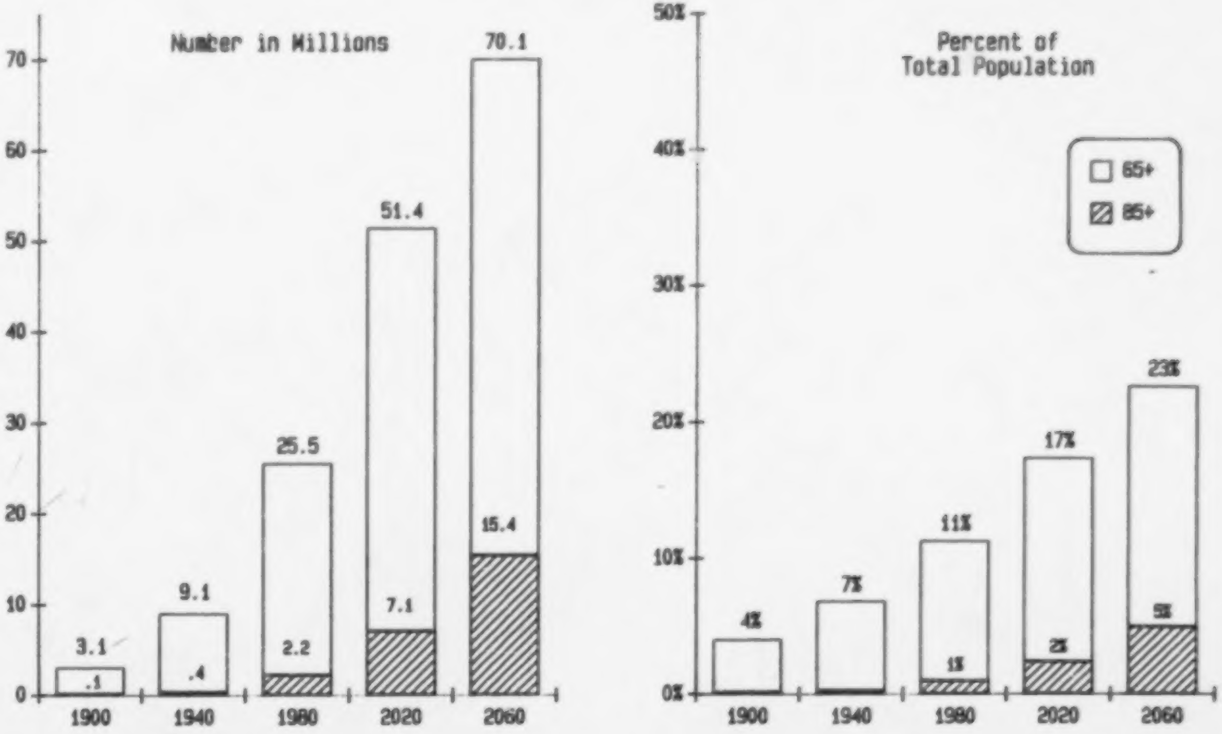
[3] Chapter 2 of the background papers sets forth a detailed analysis of demographic projections and trends. This part of the overview draws on that analysis.

A growing elderly population is not peculiar to the United States. Virtually all developed nations are experiencing a period of rapid increase in the aged population in the latter part of this century and the beginning of the next, although the timing of the fastest growth varies considerably among nations. Peak growth in Western European elderly populations occurred earlier in this century and these countries are currently aging more slowly than the United States. On the other hand, Canada, Australia, and Japan are currently aging at a faster rate than the United States, but Japan's rate is expected to decline sharply after the turn of the century.

Because of past relatively slower growth rates, the share of the U.S. population that is elderly is considerably lower than that of most Western European countries. It is not until after 2025 that the United States, Japan, and other Western countries will have about the same share (20 percent) of elderly in their populations.

Figure 1. The Increasing Elderly Population

(U.S. Bureau of the Census Projections)



### 2. *Factors Contributing to an Aging Population: Prospects for the Future*

The increase in the number of elderly and very old is primarily a result of past fertility patterns and improvements in mortality. The increase in the elderly and the very old as a portion of the whole population is accelerated by currently declining birth rates. In addition, high rates of immigration early in the century have contributed to the size of the population reaching old age; most immigrants to this country come after childhood and thus disproportionately increase the size of the adult population.

*a. Declining birth rates.*—Fertility trends represent the most important factor affecting both the size and share of the current elderly population, and the prospect of future large cohorts of aged. As fertility levels have declined since the early 1800s, each successive cohort has been smaller—relative to its parents' generation—than the one before; the baby boom is a notable exception to this generalization. As a result of declining fertility rates, the share of elderly in the population increases. In addition, because past fertility levels have still been high enough that the population has continued to increase, the number of elderly has also increased steadily.

Although it is possible to conceive of a reversal in the steady decline in birth rates to either level or increasing rates, evidence tends not to support such an expectation. This pattern of low or declining birth rates is likely to continue for some time as opportunity for greater education, economic improvement, and birth control become commonly recognized life choices for virtually all American men and women.

*b. Improvements in mortality rates.*—Increases in life expectancies have also added substantially to the aging of the population. The percentage of the population that is aged will continue to increase in response to medical advances in the treatment of the diseases of old age. Although future major medical breakthroughs are possible, incremental increases are more likely in the short run, and may rest more on the removal of environmental causes of death than on the treatment of maladies. Potential increases in death rates, due to wars, diseases such as AIDS, or other unforeseen circumstances, have not been incorporated into these projections.

*c. Changing pattern of immigration.*—The image of this country as a melting pot is based on the recognition that large numbers of people living here were either born in other countries or had parents who were. The large number of working-age people who settled here in the early part of the century are now aged, and they are not followed by the same percentages of immigrants entering at younger ages. As a result, the very old have the highest share of persons born in a foreign country of any age group. The elderly in general have a higher share of foreign born than does the younger adult population.

Immigration has become an increasingly important aspect of population growth as the natural growth rate of the population has slowed. Ultimately, if the rate of domestic births and deaths were equal, immigration would be the only source of population growth.

In the immediate future, the proportion of the population that is foreign born can be expected to rise again.

### *3. A Profile of the Future*

As a future elderly population, the baby-boom cohort will be different in many ways from previous generations. And, when the baby boom reaches retirement age, the Nation's working-age population is projected to have characteristics different from those of earlier generations of workers. The differences in the characteristics of these future populations will be important when the retirement income claims of the baby boom come due.

*a. Education.*—Members of the baby-boom generation have, on average, completed more years of school than any earlier generation in our Nation's history. Nearly half of those who will turn 65 between 2010 and 2020 have had at least some college, and 5.4 percent have not gone beyond elementary school. In comparison, over half of those who are over age 75 today have only a grade school education. Because of their greater educational attainment, the baby-boom generation should have more job opportunities and perhaps a greater attachment to the labor force as they get older, which may influence their decision to continue working or to retire.

*b. Ethnic composition.*—To the extent that different race groups have different underlying rates of growth, as the population growth slows the racial composition will change. In the United States both blacks and Hispanics have higher fertility and mortality rates than whites and other race groups. Projections indicate that a larger share of the population will be in these groups.

The effects on the working-age (25 to 64) population are even sharper. Hispanic and black workers would make up more of the workforce; the share of the working-age population that is black and Hispanic would increase by nearly 50 percent by 2020 if current trends continue.

*c. Work.*—As the working-age population grows older, the prevalence of more experienced workers also increases and that of younger, less skilled workers decreases.

In addition to the changes in ethnic composition projected for the future, the entry of large numbers of women into the workforce can be expected to continue. The past trend for women increasingly to work outside the home is expected to continue. These women will be better educated than in the past and more likely than ever before to accrue retirement rights on their own behalf.

*d. Family relationships.*—Because of their family formation patterns, the baby-boom generation may reach old age with fewer children, and with greater numbers living alone. Baby boom members have typically delayed marriage or have not married, and have had small families and high divorce rates. Thus, they are likely to become an older generation with less recourse to family social and economic support, leading to greater dependence on social services and institutions.

*e. Retirement.*—The length of time a person will spend in retirement in the future can be measured in at least two ways that are especially relevant to the question of their retirement income claims upon society. First, at what age would an average person retire if the number of years spent in retirement were to remain relatively constant over time? Second, at what age would a person retire in order to have the same ratio of work-years to retirement-years over time?

Under either measure, the age at which workers would retire if they were to maintain a relatively constant pattern would increase considerably in the future, as life expectancies would otherwise lengthen the time (absolute or relative) spent in retirement.

As individuals live longer, assuming that average retirement age remains about the same, they will also live longer in retirement. Thus, it could be presumed that not only will there be a larger number of claims for the goods and services consumed during retirement, but that those claims will be active for a longer period of time. However, one important consideration is not easily predicted: Will persons living longer lives be healthier and more likely to work, or will they have a longer period of relatively poor health and greater dependence upon the health care system?

## B. THE PROBLEM OF DEPENDENCE

Concern about the aging of the U.S. population arises, in part, from an apprehension that as the society grows older, a greater proportion of the population will come to "depend" on others for part or all of their economic well being. In that sense, public policy is concerned with the mechanisms by which a share of society's production of goods and services is reserved not only for the portion of the population that produces them, but for that portion of society that has built up claims for them although they are no longer working.[4]

### *1. Old Age as a Category of Dependence*

The increasing numbers of elderly who will receive social security and pensions is one element of this concern. This number has risen steeply in the last four decades as these retirement income systems have matured and as the number of elderly has increased.

One measure of the potential impact on society of the growing number of elderly people is the increase that it will cause in expenditures for Federal retirement and health care programs, if current policies are continued. Under intermediate projections, spending for social security and the hospital insurance portion of the Medicare program alone would rise from about 6 percent of the GNP today to 9 percent in the middle of the next century. Although program actuaries do not make long-run projections for the medical portion of medicare, there is no reason to think these expenditures will not continue to increase faster than general inflation and economic growth. Federal spending for long-term nursing home care could also grow substantially with the steep increase in the number of the elderly. (These points are developed in section VII and in chapter 10 of the background papers.)

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[4] Chapter 3 of the background papers analyzes the concept of dependency as a relationship between working and nonworking population groups. This part of the overview draws on that analysis.

### *2. Both Young- and Old-Age as Categories of Dependence*

The elderly population compared to the working-age population has increased by nearly 50 percent since 1945, and it will double over the next 55 years. Another measure of dependence, however, is the ratio of the combined young (under age 20) and elderly segments of the population to the age 20–64 group. By this measure, dependence is shown to have been at its highest point in this century sometime around 1965, when the under-20 age group was relatively large compared to the rest of the population. The combined dependency figure declines until the baby boom reaches retirement. In spite of increases at that time, projected dependency levels in the next century would actually be lower than they were in the 1950s and 1960s.

However, there is no clear way to determine the cost and distribution of the resources devoted to the dependent young, compared to those spent for the dependent aged. While the concept of an overall dependency ratio has an intuitive appeal, there is also a difference in the types of claims made upon the society by categories defined as dependent by age. The elderly rely more heavily upon the institutional forms of support—social security, pensions, medicare—than do children and thus their direct dependence is more easily measured than is the dependence of the young. Quite clearly the young also depend upon the resources of society. Much of the support for the young comes directly from family resources, but schools, playgrounds, and medical insurance also are forms of public support for them.

If a reliable value could be determined for the per capita resources consumed by the young vis-a-vis the elderly, a more definitive assessment of the aggregate needs of each group could be made, and the notion of dependence could take on greater meaning. An "investment" value would have to be assigned to the resources expended upon, say, schools or to the costs of restorative health measures that allow the elderly to extend their productive lives. If such values could be established, it would be possible to create a measure of dependence that would offset costs by long-term benefits to society of at least a portion of the expenditures. The techniques for achieving these measures of the relative dependence of the young and old, while theoretically possible, have not been reliably developed and so cannot be used to obtain valid projections on which to base policy.

### *3. The Ratio of Nonworkers to Workers as a Measure of Dependence*

A potential alternative to the cost of resources approach would be to refine the concept of categorical dependence, eliminating age as a determinant. This definition of dependence would measure the numbers of workers regardless of age and would compare that group to the number of persons not working, also regardless of age. Under this approach, the number of people who are employed would be classified as "producers," those not working, as "dependents."

This approach presents a different picture of overall trends in societal dependence than do the approaches that identify dependence by age. Directly comparing workers to nonworkers shows that dependence remained fairly stable through most of the century, but declined sharply since 1960. Even after the worker-to-nonworker figures have been adjusted to reflect a trend toward shorter workweeks, the historical evidence shows a long period of relative stability in the dependency measure followed by a sharp decline in the last decade.

While dependency shown by comparing young and old to the middle age group appears to have risen dramatically in the 1950s and 1960s (compared to levels prevailing in the preceding three decades) and since 1970 appears to have fallen dramatically, the nonworker to worker dependency ratio shows only a slight downward trend over the 50-year period from 1920 to 1970. The relationship of nonworkers to workers did not change much, despite the great increase in the number of children in society and the notable decrease in labor force participation by the elderly, because overall employment in the United States rose significantly during that time period. The sharp decrease in the nonworker to worker ratio that began in or about the 1970s can be primarily attributed to the decline in the birthrate coupled with the continued high labor force participation rate by women.

When used to project future trends, the "nonworker-worker" measure of dependency shows considerable similarity to the age-determined index of dependency. After dependency falls to a low point around 2000, it is projected to rise again beginning in the years in which the baby-boom cohort enters retirement. Under the straight "nonworker-worker" measure, the rise is projected to be somewhat smaller than under the "aged-youth" measure, but after the "nonworker-worker" measure is adjusted for a projected decline in average hours worked per week, the rise is projected to be more pronounced.

Yet, measurement problems again arise with respect to the difficulty in assigning people into one of two groups: producer or dependent. It has become evident, for instance, that entry of women into the workforce can be regarded as decreasing dependence, but it does not follow that women whose work is confined to managing a household can be counted as dependent if, for instance, their domestic labors make other measurable work possible for their spouses. Furthermore, any future pattern of rising dependence could be significantly influenced by many factors independent from age, such as labor market conditions, attitudes about work and retirement, and the availability and size of retirement income claims. (The relationship between income and the decision to retire is analyzed in section V of the overview and in chapter 6 of the background papers). Moreover, many of these other factors are influenced by other economic or behavioral conditions; a sharp upswing in the number of retirements, for instance, could cause wage levels to rise, thereby inducing some workers to delay retirement, and others to work longer hours.

### C. VIEWING THE FUTURE: ACCEPTING UNCERTAIN MEASURES

No discussion about the future demographic profile of the population or its categories of potential dependence is complete without emphasizing the highly uncertain nature of all data that can be developed about the social response to a changing demographic profile. These data are, after all, projections into a fairly distant future, and the outcomes are driven by the assumptions used to make them. As with all assumptions, the validity of any particular set is subject to debate. Furthermore, all the relevent demographic circumstances are also influenced by potential behavioral changes, both individual ones made in response to changing economic conditions or personal values, and legislative changes that respond to pressures to treat emerging issues.

## III. Preparing for the Retirement of the Baby Boom: Saving and Investing

The demographic trends described in section II imply a sharp increase in the retired population in comparison to the workforce beginning about 25 years from now. This section is concerned with delineating the role that national saving and investing can play in preparing for the baby boom's retirement years (and beyond). Supplementary policies to raise retirement ages and increase the labor force are considered in section VI. In this section, a parallel to household retirement planning is used to develop a strategy for preparing for the baby boom's retirement. This is followed by a discussion of policies to raise saving and productivity that could be helpful in implementing this strategy.

### A. STRATEGY FOR THE BABY BOOM'S RETIREMENT

#### *1. Household Retirement Planning*

National planning for retirement of the baby boom has much in common with individual planning for retirement. Persons planning for retirement would be advised by experts to work backwards from their ultimate goals. What level of bequests do they hope to make? What level of income do they seek in their retirement years?

Having determined these goals, the household—given enough time and subject to a number of constraints—can arrange its economic behavior before retirement to attain them. These arrangements can usually be divided into two categories: enhancement of household income from productive activity and accumulation of claims on others.

*a. Income from production.*—Until recent times, the major form of support for retired people was income earned by their children. "Family planning" for retirement meant having enough children—measured by number or by income-earning potential—to support both themselves and their parents. In modern times, a family business can play the same role. During the family's lifetime, its business would be built up and, at retirement, the household would derive income from its continuing profits.

*b. Claims on others.*—As societies and economies grew more complex, new avenues of support for retirees became possible. During their working lifetimes today, most people accumulate claims against others that can be converted into income during retirement. These claims can take many forms such as pensions, stocks, bonds and other loans, annuity contracts, and other financial assets, as well as such government-provided assets as eligibility for social security (or other public pensions) and entitlement to various forms of in-kind aid (medicare, for example). The common note in these sources of support is that the retired household itself does not have to be productive during retirement but can convert its stored, past productivity into income during retirement by exercising claims against others.

*c. The need to save.*—All these forms of household provision for retirement require that part of income be withheld from consumption during the working years. Whether people are sending a child to school, plowing earnings back into the haberdashery, or buying bonds—none of these can be done without curtailing personal consumption—that is, without saving.

### *2. National Planning for Retirement*

Not too much changes when we look at how a nation can prepare for the retirment of some of its citizens, although the demarcation lines (e.g., for claims on "others") need to be modified. The provision of enough income for the baby-boom cohort in its retirement will require saving to fund some combination of net domestic and foreign investment.

*a. Net domestic investment.*—One way for the Nation to ease the burden of providing for the baby boom's retirement is to build up the Nation's productive capacity over the next quarter century. By so doing, real GNP (per worker) would be high enough to offset the expected decline in the workforce relative to the retired population, providing adequate real income for both groups.

Certainly a key to the productive capacity of the economy is the amount of private sector capital in the form of factories, equipment, and structures. But a full accounting of the Nation's productive capacity would also make due allowance for the skills of its workforce (human capital) and the aids to commerce that are collectively owned (infrastructure). In the United States these are predominantly financed through the public sector.

*b. Net foreign investment.*—Opening up the economy to international trade and capital movements is analogous to allowing the household to go beyond reliance on its children and family-owned business. Specifically the accumulation of foreign assets for the purpose of liquidating them during the baby-boom retirement represents a way for the United States to live beyond its domestic productive capacity when it will need it most.[5]

How is this done? The key to understanding the role of the international sector in providing assistance to the baby boom's retirement is to recognize that international trade balances (and their mirror images—international capital movements) allow a nation to consume goods and services at a different time from when it produces them. Thus, when the United States exports more goods and services than it imports (concomitantly leading U.S. residents to accumulate claims on foreign countries), production exceeds consumption. And when the United States imports more than it exports, paying for the excess by decumulating the previously earned claims on foreign countries or accumulating debts to foreigners, it consumes more than it produces.

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[5] The translation of the claims on foreigners into imports presupposes a continuation of open markets for trade in goods and services as well as capital movements among nations.

It follows that one of the ways that the baby boom's retirement can be eased for U.S. residents is to raise the rate of investment abroad, by running export surpluses, while the baby boom is working. Then when the baby boom retires, the United States can disinvest abroad by importing more than it exports. This would allow U.S. consumption to exceed productive capacity as its labor force shrinks relative to consumption needs during those years.[6]

### *3. Providing for Future Generations*

Bequests, one element of the household's retirement plans, have been neglected in this discussion of national planning, but they have an important role. United States' policy cannot single-mindedly focus on the preparation for and duration of the baby-boom retirement years as if there was no concern beyond them. If it could, U.S. policy would be enormously easier: between say, 2010 and 2030 the United States could just borrow whatever it needs from abroad and forget the consequences. Those consequences, of course, would be that the generations from 2030 on would have to export billions of dollars of U.S.-produced goods as foreigners liquidated the claims that were acquired in 2010–30.

As part of the Nation's planning for the baby-boom retirement, therefore, it must be kept in mind that a legacy is owed to those who live after 2030 in the form of domestic capital and claims on foreign assets. It is well beyond the scope of this section to discuss how big a bequest is desirable. But two observations can be made. One is that the population of the United States in 2030 will be considerably larger than it is today (25 percent larger under the intermediate projections of the Social Security Trustees). Thus, to leave future generations as well off as today would require a 25 percent increase in capital to keep pace with population growth. Second, for as long as American economic statistics have been able to track it, each generation has left its children a larger capital stock than it inherited.

Suffice it to say, then, that one constraint on U.S. retirement goals for the baby boom is that at the end of their lives, enough capital—meaning private/public, human/physical, domestic and U.S.-owned foreign—should have been left in place to have kept pace with population growth and then some. Thus sufficient saving and investing is needed to accommodate both the baby boom's retirement and the needs of future generations.

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[6] An import surplus during the baby-boom retirement years does not necessarily mean importing more Mercedeses to Palm Beach. It could mean importing more French diapers thereby releasing workers from the U.S. diaper industry who could be absorbed as caregivers in nursing homes. No one would have to plan such resource reallocations; relative prices in domestic and in foreign exchange markets would guide them.

### 4. *A Timing Strategy for the Baby Boom's Retirement*

When should the saving and investment be undertaken? Specifically, consider the periods from 1987 to 2010 and from 2010 to 2030. In projections for the first period, the labor force grows more rapidly than the overall population (though not as rapidly as in the past 20 years); ratio of those of retired age to the total population grows slowly; and the workforce composition is sharply improving in experience and educational attainment (which usually also means productivity). After 2010, the workforce grows much more slowly than total population, the ratio of retirement-aged people to the total population grows sharply, and the composition of the workforce in terms of experience levels out.

These demographic recountings should make it clear that it is in the earlier period that the bulk of the targeted growth in capital stock should occur if living standards are to be maintained and if internal conflicts are to be minimized. This is easiest to see if one imagines that all of the growth in the capital stock were to be in the form of net foreign investment. In that case the demographic trends imply that the optimum timing strategy would be for the pre-2010 period to be devoted to export surpluses (when the labor force is growing relatively rapidly) and then, conversely, for imports to exceed exports during the baby-boom retirement years. In the latter period, foreign productive capacity would be used to supplement an American economy in which the demands of a rapidly growing retirement population would otherwise strain available resources. Doing otherwise—running import surpluses now and export surpluses during the baby-boom retirement period—is almost certainly a recipe for conflict. Under that strategy, U.S. output in the period after 2010, would have to be divided not only between the workforce (and its children) and the growing retired cohort but also by foreigners whose export demands would have to be satisfied.[7] Thus, to the extent possible, national policy should tilt toward—or at least not deter—a high investment economy in the period from now to 2010. This means an economy with high total saving as well and this is the obvious cost of and limitation on an all-out dedication to raising investment. The strategy outlined here necessarily means deferring some consumption (private and/ or public) over the next quarter century. This can be done through higher voluntary saving by individuals or collective saving through higher taxation or reduced Government consumption. Such savings would store resources in the form of human or business capital, infrastructure or claims on foreigners to be realized when the baby boom retires.[8]

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[7] The only circumstance in which it would be advantageous to borrow from abroad in the early period would be if investment opportunities in the United States were unusually high in the immediate period and if domestic savings were unavailable. In that case, early borrowing from abroad would help sustain domestic investment and, if the return is high enough in added capacity, more than pay for the exports later needed to meet the accumulated claims of foreigners. In this case as well as the one highlighted in the text, net investment (here domestic) is kept high in the pre-baby-boom retirement period.

[8] Building up the stock of capital early does carry some risks. Equipment can become outmoded because of technological advances and unforeseen economic changes. The buildup of claims abroad (foreign loans, for example) need not bear these risks. However, claims abroad bear risks of economic crises or political upheaval in other countries, as well as the risk of a

Continued

### 5. *Prospects for High Saving, Investment, and Growth*

Instead of building up wealth more rapidly in preparation for the baby boom's retirement, the United States has been moving in the opposite direction. Some signs of a moderation or reversal exist, but there is no assurance they will be sufficient to reach historical rates of accumulation and economic growth, much less exceed them, without further policy intervention.

In recent years the U.S. saving rate has been declining, productivity growth has slowed markedly from the early post-war years, and the United States has become a net borrower from abroad. Total U.S. saving—that of individuals, businesses, and governments—remained stable relative to the size of the economy during the 1950s, 1960s, and 1970s. Since 1980, however, there has been a sharp deterioration (see table 1). The predominant source of the lower saving rate has been the sharp increase in the Federal deficit.[9] The decline in saving has necessitated a decline in investment. The decline in domestic investment has been less dramatic than the decline in saving, while the decline in our investment abroad has been greater. Whereas in the 1960s and 1970s the United States was accumulating assets abroad (positive amounts for foreign investment in table 1) this has sharply turned around in the 1980s; the United States currently is borrowing abroad.

TABLE 1.—TRENDS IN U.S. SAVING AND INVESTMENT, 1950–86

[Saving and investment as percents of net national product]

| Years | Net private and State/local government saving [1] | Federal surplus/deficit [2] | Total net U.S. saving [3] | Net private domestic investment | Net foreign investment |
|---|---|---|---|---|---|
| 1950–59 | 8.0 | 0.0 | 8.0 | 8.1 | 0.2 |
| 1960–69 | 8.9 | −.3 | 8.6 | 7.8 | .6 |
| 1970–79 | 9.8 | −1.9 | 7.9 | 7.7 | .2 |
| 1980–86 | 8.4 | −4.7 | 3.7 | 5.4 | −1.7 |
| 1986 | 7.6 | −5.4 | 2.2 | 6.1 | −3.8 |

[1] State and local government saving is primarily surpluses in employee pension funds.

[2] Deficits are negative amounts.

[3] As defined in the National Income Accounts, total net saving (column 3) equals net private domestic investment (column 4) plus net foreign investment (column 5) except for statistical discrepancies.

Source: National Income and Product Accounts data compiled by Congressional Budget Office.

While projecting future saving, investment, and economic growth is notoriously difficult, some signs point to a moderation or reversal of recent declines in the rates of saving and productivity growth. The saving rate may recover some in the near term now that the Federal deficit has stabilized and targets for deficit reduction are being pursued. (However, the size of those deficits and the likely paths of reduction mean that over the 1987–1992 years the Federal budget will—compared to post-war averages—be draining

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breakdown in international trade. Finally, the buildup of wealth may raise the baby boom's expectations for retirement income. To the extent this occurs, growth will not reduce the pressure of supporting the baby boom's retirement.

[9] The aggregation of savings by decades and into only two components masks some trends that are discussed in chapter 4 of the background papers.

from rather than adding to saving for the baby boom's retirement.) Over the longer run, private saving may be modestly boosted as the baby boom moves into the life stage at which saving rates are highest. Productivity growth may also rise partially back to its post-war average as many of the factors contributing to the past slowdown, such as the inexperience of the labor force, are reversed. Finally, increased saving in the United States should reduce borrowing abroad and facilitate the buildup of claims abroad. The Japanese particularly (and West Germans to a lesser extent) will undergo a huge increase in the ratio of the elderly to the working-age population 10 to 20 years before the United States, which should reduce their saving and increase their imports, thereby helping U.S. exports and our building up of claims abroad. (The imminent retirement booms in Japan and Germany may help explain their current build-up of exports and claims abroad.)

These anticipated changes probably will not generate the rates of saving and productivity growth needed to prepare for the baby boom's retirement. Policies furthering these objectives are considered in the remainder of this section.

## B. POLICIES TO INCREASE SAVING AND PRODUCTIVITY

The Congress might be interested in policies to increase saving and productivity growth because both are below historical rates at a time when, to prepare for the retirement of the baby boom, above-average rates appear warranted. Among policies to raise saving, increased saving by the Federal Government is the most likely to have a major impact. Policies to raise private saving may also be helpful but cannot be counted on to have a major effect. A variety of policies would seem to be available to enhance productivity. Here too, though, there is great uncertainty about how much productivity would be enhanced per dollar spent and even whether any effect would be major.

### *1. Policies To Increase Public Saving*

Increased saving by the Federal Government can occur through (1) reduced deficits or a budget surplus, and (2) increased public spending on investment.[10] Of course, pursuit of one at the expense of the other leaves total saving and investment unchanged. For example, cutting the deficit by cutting needed public investment leaves total saving and investment unchanged; so does financing needed public investment through an increased deficit. Also self-defeating is the pursuit of either method at the expenses of private saving. Net saving is increased through either method only if it is financed through reduced public and/or private consumption.

Increased saving by the Federal Government has been addressed most visibly in recent years through attempts to reduce the Federal deficit. The deficit had grown to $221 billion or almost 6 percent of net national product by 1986, but the Federal deficit is predicted to decline to about $157 billion or 4 percent of net national product in 1987. The 1988 budget resolution calls for over $30 billion of additional deficit reduction, but unforeseen weakness in the economy or difficulties in implementing the budget resolution could alter the actual deficit. The Balanced Budget and Emergency Deficit Control Act calls for elimination of the deficit by 1991; however, deficit reduction has already fallen behind that called for in the legislation, and further reductions depend on painful choices yet to be made on domestic spending, defense, and taxes.

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[10] Increased public spending on investment is discussed more fully in discussions of productivity at the end of this section and in chapter 4 of the background papers.

Increased Federal saving has also been legislated for the Social Security Old Age, Survivors, and Disability Insurance trust fund. In the Social Security Act Amendments passed in 1983, a combination of revenue measures and benefit cuts were enacted which will allow the trust fund to build up a surplus while the baby boom is in its working years. The annual surplus is forecast to reach almost 3 percent of net national product at its peak early in the 21st century. However, the growing social security surplus will raise net Government saving only if it is not otherwise offset by rising deficits elsewhere in the Federal budget. Currently the Social Security trust funds are counted toward meeting the deficit targets of the Budget Control Act, so that increases in the trust fund surplus can substitute for deficit reductions elsewhere in meeting the Act's targets. To the extent that trust fund surpluses substitute for other deficit reductions, saving is not increased and the payroll tax increases of the 1983 act are simply funding other Federal spending.

Policies to raise State and local governments' funding of their employee pension plans could also raise national saving. Such saving is substantial; it already is approaching 2 percent of net national product. Furthermore, because most public pension plans are underfunded, considerable room exists for increased saving that would be tied directly to providing for the baby boom's retirement.[11]

### *2. Policies To Increase Private Saving*

The historical stability of the private saving rate suggests that policies to raise private saving are unlikely to have a significant effect. For most of the post-war era, the private saving rate has been in a narrow range between 7 and 10 percent of net national product, largely due to the stability of its major component, personal saving.[12]

Personal saving has remained relatively stable in the post-war era despite many influences that might have been expected to change it substantially. Chief among these influences are the birth and aging of the baby-boom generation, the enrichment of social security benefits, the spread of employer pensions, salary reduction plans and Individual Retirement Accounts (IRAs), and changes in tax rates and the rate of inflation.

Many proposals to raise saving use tax incentives to raise the after-tax return on saving. So long as revenue loss from the tax incentives is offset by higher taxes elsewhere, the higher after-tax return provides a clear incentive to increase saving.[13] The size of the increase is very uncertain, however, and the stability of private saving in the past suggests that the increase would be small.

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[11] Increased funding of public pensions is unlikely to be offset by reduced saving elsewhere. State and local governments tend to keep their operating budgets in balance so increased funding of pensions could be expected to add to total public saving. Also, public employees would be unlikely to reduce their own saving because improved pension funding would not increase employee benefits.

[12] Evidence and further discussion on points made in this section appear in chapters 4 and 7 of the background papers.

Policies which would raise the after-tax return on all saving include: (1) reducing marginal tax rates in the income tax and replacing the lost revenue by broadening the income tax base; (2) reducing marginal tax rates in the income tax and replacing the lost revenue with taxes targeted on consumption—such as excise taxes, sales taxes, value-added taxes; or (3) repealing the income tax and substituting a personal consumption tax.

Other policies would allow a tax incentive only for special-purpose saving, such as for retirement.[14] These limited incentives often have negative side-effects, however. Contributions may be limited, as in the $2,000 IRA limit, but then persons saving more than the limit receive no incentive. Also, savings that would otherwise be done can be shifted into the accounts to claim the tax advantage. Furthermore, when interest paid can be deducted, as with mortgage interest under current law, persons can profitably borrow to fund tax-favored contributions. As a result, limitations on the amount of mortgage interest that persons can deduct might do as much to raise personal saving as further expansion of special-purpose saving incentives. Finally, any tax incentive to raise private saving that also increases the Federal deficit will have its saving effect offset by the amount the deficit increases.[15]

### *3. Federal Policies To Accelerate Productivity*

Governmental policies can accelerate growth in productivity by supporting the major contributors to that growth. Such policies would:

—Increase the amount of capital that aids worker productivity in the private sector.

—Improve public infrastructure such as roads, sewers, airports, and harbors.

—Improve the skill and health of the labor force, and remove impediments to workers' movement to their most productive jobs.

—Support the development and implementation of new technologies.

—Reduce impediments to efficient allocation of investment and the movement of labor, including barriers to international trade, factor movements, and distortions in the tax code.

—Maintain economic stability.

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[13] If the revenue loss from a tax incentive results in a higher Federal deficit, the tax incentive may fail to raise net saving and, if ineffective in boosting private saving, could lower it. First, if individuals find themselves with higher after-tax income they may save at a lower rate than without the incentive. Second, the increased Federal deficit offsets increased private saving in arriving at net saving.

[14] The tax advantage granted employer pensions and deductible IRAs is as follows: contributions to such accounts are not taxed (e.g., IRA contributions are deductible), nor are annual investment earnings of the accounts; instead, withdrawals are taxed. This treatment is equivalent to taxing the contribution at the tax rate applicable when the funds are withdrawn, and then not taxing at all the interest accumulation of the after-tax deposit.

For further details on the tax advantage and its effect on saving, see U.S. Congressional Budget Office. Tax Policy for Pensions and Other Retirement Savings. Chapters I and IV. April 1987. (Hereafter cited as Tax Policy for Pensions) For a summary of the effect of pensions and IRAs on saving, see chapter 4 of the background papers.

[15] For further discussion of the negative side-effects of savings incentives, see chapter 7 of the background papers.

While governmental policies can affect growth in productivity, whether they can have a major positive effect is debatable. The precise effects on productivity of most policies, such as investment in education and infrastructure, or reduced impediments to efficiency, are very difficult to determine. Furthermore, some policies, such as economic stabilization, are difficult to implement and are opposed by some on the ground that the Government lacks the skill and knowledge to "fine-tune" the economy. Finally, these policies may conflict with one another as when economic-stability policies thwart the redeployment of resources from declining industries.

Even given these uncertainties, the Nation would almost certainly be better off if there were a policy strategy for enhancing productivity growth. In the absence of such a strategy, advantages are given to fragmentary programs that appear to enhance productivity but would appear less attractive if measured against broader alternatives.

## IV. Federal Policies and Roles in Retirement Income

### A. HISTORICAL CONTEXT

The United States and other modern societies have developed structured means for workers to accumulate claims against economic resources that can be drawn upon during retirement years. Over the past century changes in industrial organization, job mobility, and greatly improved life expectancies led to political support for new Federal retirement income policies. Pressures for Federal policies started in the early 1900s, and accelerated in the 1930s and 1940s. At present, the Federal Government exercises paramount responsibility for the Nation's organized systems of retirement income provision—primarily through social security, the tax subsidies afforded pensions and other forms of retirement plans, and the broad regulatory framework and guarantees of the Employee Retirement Income Security Act. Earnings-related social security and pension claims are supplemented by a means tested Supplemental Security Income (SSI) program that established a minimum income floor for all people age 65 and over. (SSI, enacted in 1972, consolidated public assistance programs for the aged, blind, and disabled, and placed a Federal floor under the benefits.) Since 1965, the Federal Government's Medicare and Medicaid programs have increased the elderly's access to medical care and have helped preserve their income and assets in the face of deteriorating health. And, finally, the Federal Government has fostered, through tax advantages and Government guarantees, the widespread accumulation of personal wealth in housing, historically a key asset in retirement years. These various Federal programs, tax preferences and guarantees enable workers to acquire larger and more secure retirement incomes earned over a lifetime of work.

### B. FEDERAL POLICIES

#### *1. Policy Objectives*

Two retirement income objectives influence national policy: (1) that all elderly persons have a minimally adequate income, and (2) that workers, over their working careers, be able to accumulate income claims sufficient to maintain an appropriate relationship to pre-retirement living standards after they retire.[16]

*a. Minimum adequacy objective.*—The clearest policy objective calls for a minimally adequate living standard after a particular age—65 under current policy. This objective is directed at elderly persons who most often have had sporadic attachment to the workforce or who worked at very low-paying jobs. Most households whose principal earner had a strong attachment to the workforce will have built up sufficient claims for earnings-related retirement income to meet any minimum standard of adequacy.

However, the income replacement objective by itself would not prevent low-wage workers from falling below minimum adequacy (as measured by the poverty level, for example) when they retire. Social security helps prevent this for low-wage earners by "tilting" its benefit formula in their favor. Recent changes in the rules governing tax-qualified pension plans have been directed to similar ends by further limiting the amount that pension benefits can be reduced by, for example, the amount of social security benefits received. As a back-up for all aged individuals, including those who had little attachment to the labor force, a number of income-tested programs exist—particularly the SSI program, veterans' pensions, and food stamps.

Federal policies and programs have succeeded in achieving minimum income adequacy standards for most of the elderly. According to the most commonly accepted measures of minimum adequacy—the poverty and near-poverty levels—average income of the elderly today compares favorably to that of the nonaged. And fewer of today's elderly suffer from poverty than their counterparts in the 1950s and 1960s.

Although incomes of most elderly married couples meet national income adequacy objectives, the circumstances of single elderly persons (particularly if they are very old) often remain marginal. Many elderly singles have sufficient income to pay for most basic living expenses, but they have limited ability to weather financial dislocations, such as a major uninsured illness. In addition, many of the elderly who are not poor nonetheless have incomes sufficiently low that they are only slightly above the poverty threshold.

Projections of the retirement income of today's workers indicate that, if real wages grow in the future at the rate assumed by Social Security's intermediate assumptions, when these workers retire their economic status will exceed that of today's elderly. But even assuming these moderate rates of economic growth, poverty may remain a substantial problem for many elderly singles.

The improved economic status of the elderly testifies to the powerful effects that the maturation and increased benefit levels of social security and pension plans have had. General economic growth made these benefit improvements possible, and also enabled most of the elderly to acquire income producing financial assets. In fact, income from financial assets grew most rapidly as a source of retirement income from 1967 to 1984. The combination of Federal policies and general economic growth improved the financial conditions of most elderly to levels unprecedented in the Nation's history. At the same time, these policies and this prosperity—in particular, the return on financial assets—drove elderly poverty rates from levels far above the rest of the population to levels below the overall average. Thus, in 1986, 12.4 percent of aged persons were poor, compared to 13.6 percent of all persons and 19.8 percent of children.

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[16] In 1981, President Carter's Commission on Pension Policy recommended sufficient retirement income to maintain pre-retirement standards of living as a national objective. This proposal has never been formally adopted (nor rejected) but it does, in some instances, serve as a policy guide.

*b. Replacement of pre-retirement living standards.*—Retirement income programs, supported by Federal policies and economic growth, have enabled most recent retirees who had a strong attachment to the workforce to acquire retirement income claims sufficient to maintain a standard of living roughly comparable to the one they had while working. Social security carries the major weight in achieving this objective for workers in the lower and middle portion of the earnings distribution. But social security, by itself, does not meet this standard for middle- and upper-income earners. For these workers, Federal policy builds upon their social security by providing tax advantages for their pensions and other tax-favored plans. Tax preferences for owner-occupied housing also are more favorable to higher-income workers. In addition, many higher-income retirees receive income from financial assets which, while the income is taxable, the assets themselves are often guaranteed by Federal insurance agencies.

The income replacement objective usually is framed as a ratio of post-retirement to pre-retirement income. Use of these ratios implicitly assumes that an individual's or couple's post-retirement consumption should equal pre-retirement consumption of housing, clothing, food, entertainment and such. Taxes, work expenses, the need for savings after retirement, and other living expenses are smaller than before retirement, and the consumption target can be met with an income replacement ratio of less than 1.0. Using income just before retirement as the denominator in the calculation of target replacement rates, income replacement ratios that maintain consumption have been estimated to range from about four-fifths for those at the very bottom of the earnings distribution to around two-thirds for median or higher earners.[17] This point is discussed further in section V of the overview.

During the past 20 years, economic characteristics of the elderly and the nonelderly have increasingly grown to resemble one another. For most, pre-retirement standards of living are being maintained during retirement—at least during an individual's or couple's 60s and early 70s. However, the cumulative effects of inflation, diminished assets, and increased health costs may cause living standards among older retirees, especially widows, to fall. And people who were poor during their working years can expect to live in poverty or near-poverty in old age.

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[17] Boskin, Michael, and John Shoven. Concepts and Measures of Earnings Replacement During Retirement. National Bureau of Economic Research. Working Paper No. 1360N. June 1984. (Hereafter cited as Concepts of Earnings Replacement)

### *2. Allocating Costs and Risks*

Two principles of cost and risk allocation generally have influenced Federal policy and program objectives. These principles—both of which would be abandoned by some proposals for basic restructuring of the current retirement income system—cause higher-income workers to pay for some of the benefit costs of lower-income workers. They also spread out the risks that workers face while accumulating retirement claims and ensure that these claims are honored in retirement.

*a. Allocating the costs of retirement income.*—Long-standing policy supports the premise that higher-wage workers should bear the larger proportion of retirement costs. Social security clearly recognizes this policy by paying benefits to lower-wage workers that are relatively high in proportion to their earnings. These high benefits for low-income workers are paid for by higher-income workers who pay disproportionately high payroll taxes relative to the benefits they receive. The so-called "tilt" in the social security replacement rate formula redistributes benefits from higher to lower earners.

In pensions and other tax-favored plans, the redistribution of costs and benefits is less evident and certain. For example, the so-called "integration" provisions in the tax code are intended to limit the extent to which such plans may counter the effects of the social security tilt. The overall impact of these and other rules for pensions is difficult to assess.[18]

*b. Minimizing risks.*—The Nation, through Federal Government programs, collectively insures against some risks in retirement income. In particular, future social security benefits depend directly on the ability of the Federal Government to satisfy the statutory claims that workers have accumulated. Further, many private retirement portfolios (company pensions and individual savings) are invested partly in Treasury obligations which carry both a Federal statutory and contractual commitment. In addition, the Federal Government exercises broad regulatory supervision of most private investment markets, and has created various insurance systems—for example, the Federal Deposit Insurance Corporation (FDIC) and the Federal Savings and Loan Insurance Corporation (FSLIC)—that guarantee deposits in most banking and thrift institutions.

Furthermore, workers acquire claims on future economic productivity through the accumulation of contractual and other legal rights that ultimately depend on the viability of private sector businesses and investments. Unanticipated economic dislocations could invalidate such retirement income claims. Workers' expectations about their benefits from tax-favored pension plans are also often conditional on the future decisions of their employers, which too are affected by economic circumstances. Even social security and retirement claims held as Government bonds ultimately depend on the long-run overall viability of the Nation's economy.

Federal legislation minimizes risks in private pension retirement claims. In particular, the Employee Retirement Income Security

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[18] For a more extensive discussion of how pension costs may be shifted from lower- to higher-income workers, see CBO, Tax Policy for Pensions, chapters IV and V.

Act of 1974 (ERISA) imposes a variety of requirements on retirement plans. Some requirements govern the terms and conditions of participation, coverage and vesting. Others impose portfolio diversification and fiduciary standards on plan sponsors, including a requirement that prevents most pension plans from holding more than 10 percent of its assets in the stock or property of the sponsoring employer. In addition, the Pension Benefit Guaranty Corporation (PBGC) guarantees accrued benefits (up to certain levels) in those defined benefit plans that terminate with insufficient assets to meet pension obligations.

The congressional debate continues about the Federal Government's role in further circumscribing the risks associated with retirement income claims. Congress has considered, but not adopted, additional Federal Government regulation that would insure retirement income claims against risks of portfolio concentration, default, and unanticipated inflation. The recent experience of pension terminations and asset reversions has brought into focus some fundamental questions about what are legitimate expectations of workers in their defined benefit pension plans. ERISA has safeguarded worker coverage and vesting in pension plans, but this law has paid comparatively little attention to the value of the benefits—especially as those values are eroded by the combination of job changing and inflation.

## C. THE FEDERAL FINANCIAL ROLE IN RETIREMENT INCOME POLICIES

Federal retirement income policies are carried out by (1) direct spending programs, such as Social Security; (2) tax subsidies, for qualified private pensions and other plans; and (3) Government-sponsored insurance, such as the PBGC.

### *1. Direct Federal Spending on the Elderly* [19]

This section analyzes trends in Federal spending on the elderly during the past 20 years and compares it to projected spending during the period in which the baby boom will be retiring. The effects of Federal spending on the elderly in the different years is measured by comparing this spending to the GNP.

*a. Recent trends in Federal spending on the elderly.*—The amount of Federal resources spent on the elderly (generally, those aged at least 65) grew rapidly over the past 20 years because of maturity of the programs, rapid economic growth, growth in the size of the elderly population, and decisions to cover an increasing share of their needs through public programs. Between fiscal year 1965 and fiscal year 1985, Federal spending for the elderly—on cash and noncash transfers, Federal retirement, and disability benefits and services—grew from about $63 billion to nearly $260 billion in constant 1985 dollars, or from about $3,400 per elderly person to more than $9,000 in constant dollars. During that period, spending for the elderly rose from 16 percent of 27 percent of all Federal outlays, or from about one-third to nearly one-half of all outlays for domestic programs (that is, spending other than for defense and net interest payments). In this 20-year period Federal spending for the elderly grew from 2.8 percent to 6.6 percent of the GNP.

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[19] This analysis borrows heavily from a statement by Rudolph G. Penner, Director, U.S. Congressional Budget Office, delivered before the Subcommittee on Economic Resources and Competitiveness, Joint Economic Committee, July 31, 1986.

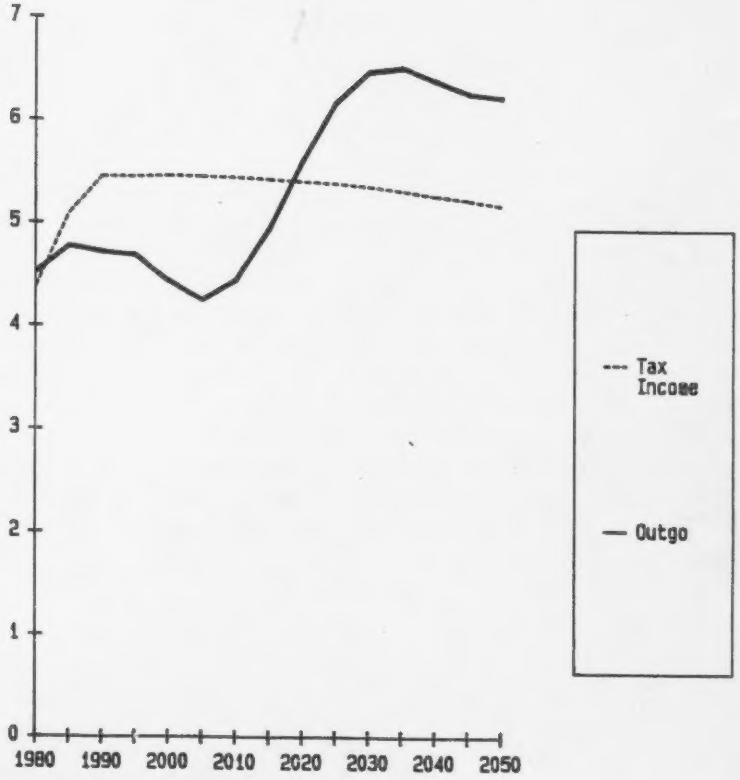
*b. Projections of future Federal spending on the elderly.*—Future Federal spending on the elderly will depend on rates of economic growth and on future public policy decisions. Although precise budgetary impacts cannot be forecast, it is possible to identify in broad terms how demographic trends would affect major categories of Federal spending if current policies are essentially unchanged.

These projections should be treated with caution, for they are sensitive to the assumptions on which they are based. For example, under the Social Security Trustees' most optimistic assumptions, social security cash outlays are expected to amount to 5.32 percent of GNP in 2035. By contrast, under the most pessimistic assumptions, social security cash outlays would be 8.33 percent of GNP. Furthermore, the projections assume a continuation in the Nation's willingness to spend an ever greater fraction of its resources on medical care, for reasons that are largely independent of the aging of the population.

*Social Security.*—Projections based on Social Security's intermediate economic and demographic assumptions show social security expenditures rising to a peak of 6.51 percent of GNP by 2035, in the midst of the baby boom's retirement. This represents an increase of 38 percent over the current level of 4.73 percent. This percentage actually declines over the next 20 years, before the baby-boom retirement begins, reflecting the low birth rates of the 1930s. (Figure 2 projects these trends through the year 2050 and compares social security expenditures to tax revenues—both as a percent of GNP.)

Figure 2.
Social Security Trust Fund
Income and Outgo

As a Percent of GNP



Source: Social Security Administration. Long Range Estimates of Social Security Trust Fund Operations. Actuarial Note 130. April 1987.

*Medicare.*—Growth in the number of elderly people could affect rates of increase in Federal spending for elderly medical expenditures more significantly than it does social security (see section VII and chapter 10 of the background papers for a more complete discussion of this point). Currently, medicare pays for about 49 percent of total costs of providing acute health care for older Americans.[20]

In contrast to social security, projection of medicare outlays assume continued medical care expenditure growth in excess of GNP growth. The Hospital Insurance (HI) component of medicare is projected to rise from about 1.16 percent of GNP in 1987 to about 2.86 percent by the year 2035—an increase of 150 percent.

Although long-term forecasts of medicare's Supplementary Medical Insurance (SMI) program are not available, CBO estimates that the recent rapid growth in SMI expenditures (17 percent annually between 1977 and 1987) will continue in the near term. CBO's most recent projections foresee SMI outlays, net of enrollees' premiums, to rise from .5 percent of GNP in 1987 to .7 percent by 1992. At present, there is little reason to doubt that SMI will grow at a slower rate than HI over the long run, an assumption which implies spending in SMI by 2035 will be 1.74 percent of GNP.[21]

*Long-term care.*—The aging of the population will increase substantially the need for long-term care (LTC) services, ranging from limited assistance at home with the tasks of daily living to skilled medical care provided in a nursing home or other institutional setting. Spending for LTC for both elderly and nonelderly persons has grown rapidly in recent years, driven by many of the same factors that have pushed up acute-care costs. Public funding for LTC services pays for about half of all spending on long-term care. Total public spending for nursing home care and home health services in 1986 was $25 billion, or 0.6 percent of GNP. Of that amount, long-term care expenses in the Federal-State Medicaid program, the great majority of which goes to finance nursing home care, made up about $20 billion of the total, with the Federal Government paying about 55 percent of that cost. Currently, LTC expenditures account for about 45 percent of all Federal and State medicaid outlays. (States have a great deal of flexibility in setting medicaid rules, however, and the share of total spending devoted to LTC services and the rate of growth in those expenditures varies appreciably around the Nation.)

Remaining public spending for LTC is accounted for by medicare, programs funded under the Social Services Block Grant to States, Veterans' Administration health care, Older Americans Act programs, and resources provided by States and localities out of their own revenues. Private spending for LTC—an amount roughly equal to public spending—is almost all paid out of pocket by patients or their families, rather than through private insurance mechanisms.

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[20] Waldo, Daniel R., and Helen C. Lazenby. Demographic Characteristics and Health Care Use and Expenditures by the Aged in the U.S.: 1977-1984. Health Care Financing Review, v. 6, No. 1, fall 1984.

[21] The SMI projection for 2035 is based on rates of increase for HI provided in the 1987 report of the Social Security Board of Trustees. A similar methodology for projecting SMI growth is presented in Holahan, John, and John Palmer. Medicare's Fiscal Problems: An Imperative for Reform. Washington, The Urban Institute, 1987. p. 7.

In addition, many services are provided without reimbursement by family members or by other informal caregivers.

Demand for LTC services will almost certainly increase steeply in the decades ahead as the number of very old individuals grows. While less than 2 percent of all people between the ages of 65 and 74 reside in nursing homes, 7 percent of all 75- to 84-year-olds and more than 20 percent of all those age 85 or older live in such institutions. Thus, the expected doubling in the number of 75- to 84-year-olds between now and the year 2050, and the projected six-fold increase in the number of people over 85, portend a large potential increase in the demand for LTC services.

*Other programs.*--The aging of the population will also affect smaller Federal programs. Compared to other spending on the elderly means-tested transfers to the elderly will grow more slowly and could fall as a percent of the GNP. To the extent that real growth in average social security benefits, in public and private pensions, and increased returns on savings continue to shrink the proportion of elderly with very low incomes, spending in such programs as SSI and food stamps will drop. Even today, however, spending for the elderly under these programs is small compared with expenditures for work-related retirement income and health care programs. In 1984, Federal spending for the elderly under SSI and food stamps amounted to only about 0.1 percent of GNP.

Future spending for appropriated programs benefiting the elderly—such as subsidized housing, Veterans' Administration health care, and home energy assistance—is harder to forecast. While growth in the number of elderly could increase the demand for these services, funds would have to be appropriated and will not rise automatically. Instead, their cost will depend on annual funding decisions made by future Congresses.

*c. Accommodating increased Government spending on the elderly.*—The projected growth in the size of the elderly population in the years ahead will place additional demands on the Nation, but this will not be the first such challenge it has faced. For example, in the 1950s, the United States accommodated large increases in public and private spending on children. Similarly, over the past two decades the Nation adapted to an increase in the size of the elderly population while greatly improving their average standard of living.[22] Although from a much lower base, Federal spending on the elderly actually has increased over the last 20 years by a greater extent than is projected, under the intermediate assumptions, over the next 60 years or so.

Assuming a continuation of current policy, spending for social security and medicare (including SMI) is projected to rise from 6.39 percent of GNP in 1987 to approximately 11 percent by 2035. While smaller than social security, medicare would see the greatest percentage growth. Federal spending for long-term care—though low today compared with either social security or medicare—also could grow explosively with the steep increase in the number of very old.

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[22] The United States also has accommodated significant changes in spending on national defense in relatively short time periods. For example, between fiscal year 1972 at the end of the Vietnam War and fiscal year 1980, such spending decreased from 6.9 percent of the GNP to 5.0 percent. By fiscal year 1986, it has increased back up to 6.6 percent. See, U.S. Congressional Budget Office. The Economic and Budget Outlook: Fiscal Years 1988–1992. Table F-6. January 1987. p. 160.

Faced with these projections of Federal spending on the elderly, several broad choices are available. First, future demographic shifts could be accommodated without changing current public policies, thus allowing the cost of public programs for the elderly to increase relative to the size of the economy. Alternatively, the growth in such programs could be curtailed. That would leave future generations of the elderly more heavily reliant than they would otherwise be on their own resources or on aid from family members. In many instances, this would lead to a lower standard of living—at least relative to pre-retirement standards—for many of the elderly in the future than is enjoyed by today's elderly. A third broad choice would be to encourage—or require—today's working-age population to contribute more in advance toward meeting the needs they will face in their old age. This strategy can be effective in expanding the Nation's future economic base only if the Government does not offset such advance funding with increased borrowing (see section III of this overview and chapter 4 of the background papers). As a consequence, this strategy almost surely would entail higher taxes or decreases in other Government spending. Thus, either some sacrifice in personal consumption or the level of Government services would be necessary.

Of course, projections such as these will be profoundly affected by developments in technology, biomedical research, and demographic conditions. If, for example, birth rates should greatly increase or if immigration should exceed current statutory assumptions, then the future working population and, therefore, the GNP would be larger. Consequently, the cost of Government programs for the aged would be a smaller fraction of GNP. Within any of these broad policy choices, the Federal Government could also alter current programs, the distribution of their benefits, or the manner in which they are financed without affecting total program costs.

### *2. Income Tax Subsidies*

Income tax subsidies—that is, departures from the "normal" principles of income taxation—also affect the income available to the elderly after retirement. These tax subsidies come in two forms: tax benefits designed to lessen the tax burden of older citizens; and tax advantages designed to increase the accumulation of retirement income among today's workers for their future retirement.

*a. Tax benefits for older citizens.*—The major tax benefits for the elderly have included the exemption from taxation of most social security payments and the larger personal exemption for the elderly. Most social security benefits are excluded from Federal income taxation, and only about one-half of all elderly people pay any Federal payroll or income taxes. About 90 percent of all other adults pay taxes. For fiscal year 1988, the Joint Committee on Taxation estimates that the exclusion of social security benefits (in excess of amounts equal to employees payroll taxes) reduces income tax revenues by about $19 billion.[23]

However, in the future, social security benefits will become increasingly subject to income taxes. Under current law, higher-income taxpayers must include up to one-half of their social security benefits in their taxable income if their income exceeds $25,000 in the case of single filers or $32,000 in the case of joint filers. (For these purposes, income is the combination of their adjusted gross income, one-half of their social security benefits, and any tax-exempt bond interest.) These thresholds, however, are not indexed, and successive cohorts will be including more and more social security in their taxable income.

The Tax Reform Act of 1986 diminished some, but not all, of the provisions benefiting the elderly. Most importantly, the 1986 act eliminated the larger personal exemption for the elderly, substituting a somewhat larger standard deduction for elderly taxpayers who do not itemize their deductions. According to Joint Committee estimates, this new provision will entail an annual revenue lost of $1.3 billion from 1988–1992.

*b. Tax advantages for retirement accumulations.*—The favorable treatment granted to accumulations in tax-qualified retirement programs—including IRAs—affects the Federal revenue base more than any other tax preference. This favorable treatment exempts from taxation most investment gain accumulated for retirement purposes.[24] The Joint Tax Committee estimates that the 1988 revenue loss associated with qualified plans will total about $58 billion, an amount that is 1.2 percent of GNP.

The 1986 Tax Reform Act curtailed some tax advantages for qualified plans. The principal changes eliminated the deductibility of contributions into IRAs for upper-income taxpayers and diminished somewhat the tax benefits for contributions to employer-sponsored plans, especially salary-reduction plans. Despite these changes, there probably will be an upward trend in the revenue losses associated with qualified plans as baby-boom workers enter into the years in which their pension, IRA, and similar retirement accumulations will be the greatest. Nonetheless, the revenue losses for qualified plans are unlikely to exceed 2 percent of GNP at their peak. In the post-2015 period, the revenue losses from qualified plans will stabilize, even decline, as the Government begins to collect taxes on a bulge in plan and IRA distributions associated with the baby boom's retirement.

A final major tax advantage particular to retirement accumulations is the one-time exclusion, for taxpayers over age 55, of $125,000 (or less) in gain from the sale of a principal residence. This provision, according to Joint Tax Committee estimates, will reduce income tax revenues in fiscal year 1988 by about $2.3 billion.

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[23] This figure includes the parallel exclusion for railroad retirement benefits and the historically associated tax credit for the elderly. The latter credit applies to the pension income and earnings of taxpayers—such as retired Federal employees—who receive little or no social security benefits compared to most retirees. Estimates of revenue losses included in this section are from: U.S. Congress. Joint Committee on Taxation. Estimates of Federal Tax Expenditures for Fiscal Years 1988–1992. Joint Committee Print No. JCS-3-87, 100th Cong., 1st Sess. Washington, U.S. Govt. Print. Off., 1987.

[24] See footnote 14 and the references cited therein for a description of the advantages of tax-qualified plans.

*3. Government Guarantees*

The Federal Government underwrites certain risks in retirement income accumulations. Some of these guarantees follow from more general policies, such as the protection provided all deposits in financial institutions, including those that are part of people's retirement portfolios, that belong to the Federal Deposit Insurance Corporation (FDIC) or the Federal Savings and Loan Insurance Corporation (FSLIC). Further, institutional and household retirement portfolios are partly invested in different types of Federal obligations which carry the Government's full faith and credit.

In addition, the pension promises that employers make in defined benefit plans are guaranteed to the extent of "accrued benefits" by the PBGC. If financially distressed firms terminate their defined benefit plans, and if the plans have insufficient assets to pay accrued benefits, the PBGC will pay those benefits up to an indexed limit. Because the value of workers' accrued benefits in a defined benefit plan increases with age and job tenure, this protection is especially valuable to people who have already retired or who are relatively close to the plan's retirement age. In 1987 PBGC protection covered benefits, payable at full retirement, equal to, or below, $1,850 per month ($22,200 annually). To fund this protection, PBGC charges employers who sponsor defined benefit plans an annual premium for each covered worker.

Between 1974 and 1986, the PBGC accumulated a deficit of about $3.8 billion. This funding shortfall represents the difference between PBGC's assets of $3.6 billion and the present value of its liabilities to participants in underfunded plans which it has taken over (approximately $7.4 billion). Future claims against the PBGC are very difficult to estimate. They depend on both the overall future of the economy and the market viability of the particular major corporations that primarily sponsor defined benefit plans. Unfunded benefits among private defined benefit plans currently total several billion, but they can vary over time according to contribution adjustments, revisions in plan provisions, and the performance of the financial markets.

The PBGC's protection does not entail the full faith and credit of the United States. Nonetheless, if the defined benefit pension world should begin to seriously contract, future policymakers would be confronted with some difficult choices. For example, if well-funded plans are faced with ever-escalating premiums, resulting from the terminations of some large, seriously underfunded plans, then they might choose to cancel their plans. This would leave PBGC with an ever-declining revenue base. Under these circumstances, Federal policymakers would have to choose among infusions of general revenues, trying to lock-in plan sponsors to preserve the system's revenue base, and having participants receive much lower benefits than they were expecting.

## V. INFLUENCE OF INCOME ON RETIREMENT PATTERNS

### A. INTRODUCTION

During this century dramatic changes have occurred in the work and retirement patterns of American workers and in the financial resources of older persons. Retirement, once a luxury only a few enjoyed, is now an expected fact of life for the average worker. In addition, in recent years, retiring workers have been leaving the labor force at increasingly young ages, a phenomenon that appears inconsistent with the generally improving health of the population, increasing life expectancies, and improved working conditions.

Access to retirement income sources not available in the past makes retirement economically feasible and in part explains the declining labor force participation of older persons. In the early part of this century older persons who were able to work did so. Many who did not work depended on the support of grown children and family, but others simply spent their last years in poverty. By almost any measure, the overall situation of the aged has changed for the better, although poverty continues to be a problem among certain subgroups of the elderly.

The affluence of today's retirees relative to previous generations and to current workers may be a phenomenon characteristic of this one generation. Most projections into the future assume moderate and sustained rates of economic growth. If it does not occur, today's workers may have relatively less retirement income than their parents, although even low rates of real wage growth will increase the real dollar value of future retirement income.

Today's retirees grew up during the Depression and had their expectations of the future colored by that experience. However, as young adults they entered the labor force around the time of World War II, and the subsequent economic growth of the 1940s, 1950s, and 1960s brought them jobs and prosperity. Employer pension coverage expanded significantly, and social security was liberalized in the late 1960s and 1970s. In comparison, the experiences of the baby-boom generation have been and may continue to be different. If the return to economic growth is not sustained, a comfortable retirement at an early age will be less likely for this generation of young workers.

### B. INCOME STATUS OF THE ELDERLY

Evaluating the income adequacy of the elderly as a group takes two perspectives: (1) the income of the elderly compared with that of the nonelderly; (2) the income of the elderly compared with their own income earlier in life.

By either of these measures, the income status of the current generation of elderly persons constitutes a generally comfortable picture. Although the current total household income of the elderly is lower than the income of households headed by nonelderly persons, when the smaller household size and special tax status of the elderly are taken into account, the picture looks quite different. The average gross income of a household headed by someone age 40 to 54 is about twice as high as the average gross income of a household headed by someone 65 or over, but the after-tax, per capita income of elderly households is actually sightly higher than that of younger families ($8,886 in 1984 for elderly households compared with $8,238 for those with a head age 40–54). (Chapter 5 of the background papers discusses this point more extensively.)

The poverty rate measures the income adequacy of given demographic groups. The incidence of poverty among the elderly population has improved substantially in recent years, a further indication of their improved economic status. In 1969 nearly one-fourth of the elderly population lived below the poverty threshold. By 1984 this portion had dropped to one-eighth.

Replacement rates measure post-retirement income compared with pre-retirement income and are used to evaluate the extent to which retirees can continue their pre-retirement standard of living when they no longer have earnings. Replacement rates take into account the somewhat reduced consumption needs of retirees as well as certain tax advantages for the elderly. For example, retirees no longer have work-related expenses such as commuting costs or clothing suitable for work, and generally are freed from costs associated with child rearing and education. In addition, it is usually assumed that retirees no longer need to save for retirement but can begin to draw down savings. Finally, although social security benefits are partially taxable for some upper-income retirees, most beneficiaries pay no taxes on their social security income. Many retirees face lower Federal and State income taxes than they did during their working years and benefit from other special tax provisions.

Although a few researchers have attempted to establish "target" replacement rates to determine what percentage of pre-retirement income is necessary to maintain living standards in retirement, there are no universally accepted replacement rates (nor, in fact, is the measuring period for pre-retirement income generally agreed on). One study suggested replacement rates from about 81 percent for lower-income couples falling to about 66 percent for upper-income workers.[25] Using data from the Social Security Administration's Retirement History Survey, and defining pre-retirement income as the highest 3 years of the previous 10, another study found that the retirement incomes of couples approached target replacement rates except among those with relatively high pre-retirement earnings. Among single women, however, replacement rates fell short at most levels.[26]

### C. TO WHAT IS THE IMPROVED INCOME STATUS OF THE ELDERLY ATTRIBUTABLE?

Increasing income from sources other than earnings has made retirement possible and comfortable for many Americans. In general, retirees are financially better off today because they have accrued claims to work-conditioned retirement income, including social security, and have accumulated personal savings. Between 1967 and 1984, the proportion of elderly households receiving social security benefits rose slightly, from 86 percent to 91 percent (see table 6 in chapter 6 of the background papers). However, the average social security benefit for retired workers increased by two-thirds, from about $3,540 in 1965 to $5,858 in 1987 (in 1987 constant dollars). This growth in benefits represents a substantial real increase in benefits resulting from liberalization of the payment formula and real wage growth.

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[25] Testimony of Dr. Alicia H. Munnell, House Ways and Means Subcommittees on Oversight and Social Security, July 18, 1985.

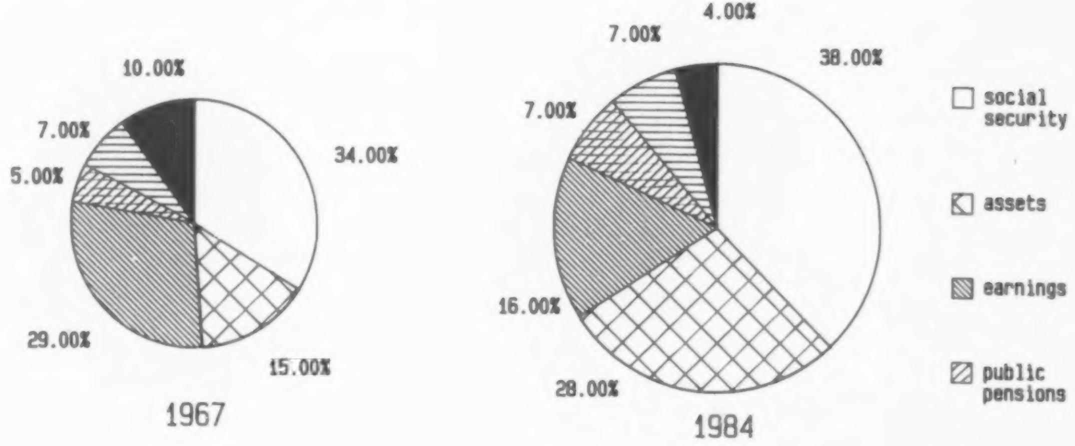
[26] Boskin and Shoven, Concepts of Earnings Replacement.

From 1967 to 1984, social security as a share of all income going to the elderly increased by only 11 percent, from 34 percent to 38 percent (see figure 3). On average, however, benefits increased by about two-thirds in real terms. This indicates that the income of the elderly from sources other than social security has increased as well. Among other sources, the most telling change is the reversal of earnings and asset income as income shares. Twenty years ago, earnings accounted for 29 percent of all income going to households with an elderly member (age 65 or over), and were second only to social security as a share of the income of the aged. By 1984, however, earnings accounted for only 16 percent of the income of elderly households, ranking third as an income share after social security and income from financial assets. Thus, it appears that income from assets has offset much of the decline in income from earnings, as is illustrated by figure 3. Not only is asset income an important source of support for older persons, but it also is received by a substantial portion of elderly households: over two-thirds report receipt of asset income. Although there is a large variance in the amount of asset income received by individual elderly households (and it varies substantially by income level), it is extremely important to today's retirees, accounting for a large share of income received by a significant portion of that population. This sizable asset income may explain much of the labor force withdrawal that has been occurring on the part of men in their early 60s.

Figure 3.

Income Shares of Aged Households a/

(All units, including married couples and nonmarried individuals)



a/ In 1984 dollars

Source: Income of the Population of 55 and Over (1976-1984) and Demographic and Economic Characteristics of the Aged: 1968 Social Security Survey, U.S. Department of HHS.

About one in four elderly persons receives pension income from a private employer, and one in six receives a pension from public sector employment. The proportion of aged households receiving private employer pensions grew significantly between 1967 and 1984, from 12 percent to 24 percent, but, as a percent of all income going to elderly households, private pensions increased only from 5 percent to 7 percent during this time. This indicates that much private pension income is quite small: in 1984 the median private pension was about $2,900 for retirees age 65 and over, and about $4,500 for those age 55–64.

Overall, the points to be made about the income of the elderly are that (1) it has increased substantially over recent decades, but (2) the proportion of income from social security and pensions has changed little, but a significant shift has taken place with decreased earnings and increased asset income in the period. Thus, although it is often maintained that social security has been largely responsible for the improved situation of today's elderly, it has been a more important factor for those without other sources of retirement income than it has been across the entire income spectrum.

### D. INCOME DISTRIBUTION AMONG THE ELDERLY

As might be expected, lower-income elderly households rely heavily on social security and public assistance income and have little in the way of asset income (table 2). Social security accounted for 77 percent of the income of those elderly who had incomes below $5,000 in 1984. Although 9 out of 10 elderly households received social security, it accounted for only about one-fifth of the income of the wealthier recipients (those with incomes over $20,000). The data also indicate that the elderly who continue to work generally have higher incomes than those who do not, a factor that is likely to be associated with a history of better-paying jobs, good health, and thus better opportunities for continuing employment.

TABLE 2.—SHARES OF AGGREGATE INCOME BY SOURCES FOR AGED UNITS AGE 65 AND OVER, 1984

[In percent]

| Income status | Employment earnings | Social security | Employer pensions or private annuities | Income from assets | SSI | Other | Total |
|---|---|---|---|---|---|---|---|
| Under $5,000 | 0 | 77 | 3 | 4 | 14 | 2 | 100 |
| $5,000–$9,999 | 4 | 71 | 8 | 10 | 3 | 3 | 100 |
| $10,000–$19,999 | 10 | 48 | 17 | 21 | 0 | 2 | 100 |
| Over $20,000 | 23 | 20 | 15 | 39 | 0 | 1 | 100 |
| Total | 16 | 38 | 14 | 28 | 1 | 2 | 100 |

Source: U.S. Dept. of Health and Human Services. Social Security Administration. Income of the Population 55 and Over, 1984. SSA Publication No. 13–11871, Dec. 1985.

The economic situation of the over-65 group as a whole is much improved over what it was in past generations, but large disparities remain among certain subgroups of the elderly. In particular, the incidence of poverty remains high among elderly single women. Nearly 20 percent of all elderly women who live alone have incomes below the poverty threshold (a total of 1.4 million women), about double the poverty rate for all elderly people. And, if not actually below poverty, many single elderly women have near-poverty incomes: a total of 44 percent of all elderly widows have incomes below 150 percent of the poverty level.[27] (For additional discussion of poverty and the elderly, see chapter 5 of the background papers.)

The causes of poverty among older women are varied and complex, but a few generalizations can be made. Many have been poor or low income for a large part of their lives. If they spent time in the labor force, it was at low paying and often intermittent jobs; many were married to someone who was a low-wage worker. The low-income and poor elderly did not, in their younger years, have the kind of work and income history that would permit accumulation of savings, pensions and large social security benefits. A recent study on the causes of poverty among widows found that these women are likely to have had husbands whose health was poor, with the concomitant problems of lower earnings, less savings (or perhaps depleted savings), early labor force withdrawal due to health factors and early death.[28] About half of poor widows had been poor before widowhood, and half became poor upon widowhood either through lack of accrual of retirement income or because of medical and death expenses. Recent legislation requiring that the election or rejection of a spouse survivor benefit be a joint decision by husband and wife will have little effect on such survivors because, for many, no pension rights were accrued and, for others, the pension benefits are not large enough to provide a survivor benefit of any size.

Review of the income sources of the poor and nonpoor elderly who live alone (80 percent of whom are women) indicates how important social security is to these people (table 3). Social security represents an estimated 79 percent of the income received by single elderly persons living alone and below poverty; in comparison, it represents an estimated 22 percent of the income of those who might be classified as moderate to high income ($16,224 and over per year). It is estimated that about one-third of this population receives public assistance (principally SSI), and, in combination with social security, these two sources make up 93 percent of the income of the poor, single, elderly population. Thus, in spite of receiving social security and SSI, many elderly remain in poverty. This is true because basic Federal SSI benefits (currently $340 per month for a single individual) are below the poverty threshold, and they are reduced dollar-for-dollar by any social security the individual receives in excess of $20.

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[27] The Commonwealth Fund Commission on Elderly People Living Alone. Old, Alone and Poor. A Plan for Reducing Poverty Among Elderly People Living Alone. (Technical analyses by ICF, Inc.) Baltimore, April 1987. (Hereafter cited as Old, Alone and Poor)

[28] Hurd, Michael, and David Wise. The Wealth and Poverty of Widows: Assets Before and After the Husband's Death. Draft report to the Commonwealth Fund Commission on Elderly People Living Alone.

### TABLE 3.—RELATIVE CONTRIBUTION OF INCOME SOURCES FOR PERSONS AGE 65 AND OVER LIVING ALONE, 1987

[In percent]

| Poverty status | Employment earnings | Social security | Employer pensions | Income from assets | SSI | Other | Total |
|---|---|---|---|---|---|---|---|
| Poor [1] (under $5,408) | 1 | 79 | 3 | 3 | 14 | | 100 |
| Near poor [2] ($5,409–$8,112) | 3 | 81 | 6 | 8 | 2 | | 100 |
| Modest income [3] ($8,113–$16,224) | 7 | 56 | 13 | 21 | | 3 | 100 |
| Moderate-to-high income [4] (over $16,224) | 12 | 22 | 13 | 52 | | 1 | 100 |
| Total | 9 | 40 | 12 | 37 | 1 | 1 | 100 |

[1] Estimated poverty threshold for single elderly persons in 1987.
[2] 100 percent to 150 percent of poverty.
[3] 150 percent to 300 percent of poverty.
[4] Over 300 percent of poverty.

Source: Estimates prepared for the Commonwealth Fund Commission on Elderly People Living Alone (1987) by ICF, Inc. Estimates are based on Current Population Survey (CPS) data adjusted for survey underreporting.

Under projections of social security benefits published by the Social Security Trustees based on their intermediate assumptions and projections of income from all sources by ICF, Inc., also using the Social Security intermediate assumptions, future generations of elderly persons will be better off in real terms than today's retirees.[29] Nevertheless, poverty among elderly people living alone and among women in particular is potentially a problem that will persist into the first decade of the next century; it would persist if (1) women continue to work less steadily and at lower-wage jobs than men and thus qualify for lower social security and pension benefits, and (2) if working women continue to be employed in industries with low pension coverage rates. Various projections of real wage growth indicate that the elderly in the future will have larger retirement income in real dollars than today's retirees, and that the poverty rate among elderly as a group would consequently fall. However, increases in retirement income for elderly single women might not improve accordingly because, in spite of increasing labor force participation among women, many may continue to have relatively sporadic attachment to the labor force and earn relatively low incomes.

## E. RETIREMENT: PAST TRENDS AND FUTURE DIRECTIONS

If projected rates of continued economic growth far into the future do not materialize the baby boom will approach their retirement years with fewer sources and lower amounts of retirement income compared to today's retirees. The current generation of retirees has benefited from uniquely favorable economic conditions. They participated in economic growth during their early adulthood, realized significant real wage growth, were able to buy homes at an early age, and accrued savings in financial assets. The rise in interest rates that began in the late 1970s and continued through the early 1980s allowed their savings to compound and grow in the years just before retirement and in early retirement when their consumer spending was declining. Thus, it has been possible for them to supplement their income with large returns on their savings. As a result, the current generation of retirees entered their later years with appreciable personal financial resources in addition to substantial social security benefits and the assurance that their social security would maintain its purchasing power. Hence, they could afford to retire early, and such a trend became apparent in the 1970s.

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[29] Old, Alone and Poor. In the preparation of this report, the Commission contracted with ICF, Inc., a research-consulting firm, for estimates and projections pertaining to income sources and amounts for the elderly population. ICF data are included as an appendix to the Commission report. When used in this paper, these estimates and projections will be referred to as prepared by ICF, Inc.

### *1. Past Retirement Trends*

The increase in the incidence of retirement and the trend toward earlier retirement among American workers are readily apparent from historical labor force participation data (see chapter 6 of the background papers). Only 16 percent of men age 65 and over were in the labor force in 1985. This is one-third the rate for this age group 35 years earlier. Bureau of Labor Statistics (BLS) data also show a clear trend toward retirement before age 65. The labor force participation of men between the ages of 55 and 64 dropped by over one-fifth between 1950 and 1985, much of which can be attributed to social security's becoming available to men at age 62 as of 1961.

Looking ahead toward the retirement of the baby boom in the first decades of the next century, a critical issue is whether these trends toward early labor force withdrawal will continue, stabilize, or possibly reverse. The trend toward retirement at younger ages causes concern as the retirement of the baby-boom generation approaches and raises the specter of an increasingly large group of older nonworkers dependent on a comparatively small labor force (chapter 3 of the background papers analyzes measures of "dependence" in detail). To the extent that members of the baby boom are currently building up claims for future retirement income, continuation of recent early retirement trends raises serious questions about whether the resources will be available to meet the claims of an unprecedented number of retirees. Projections by the Social Security Trustees and others, based on the growth rates of intermediate assumptions, show that over their remaining working years the baby boom will realize real growth in their retirement benefits and will accrue adequate resources for a comfortable retirement. But the extent to which the baby-boom generation reaches retirement with the private resources to provide for themselves will depend in large part on whether this projected economic growth actually materializes.

### *2. Early Retirement and the Baby Boom*

Thus far, as young adults the baby-boom generation has experienced low real wage growth since they entered the labor force in the 1970s. Unless the future holds a return to sustained periods of economic growth, they may be in a very different position from today's retirees as retirement age approaches. Large, ad hoc increases in social security replacement rates such as occurred in the late 1960s and early 1970s are unlikely to occur again. But if income from pensions and social security grows enough as a share of income of the elderly, and if individual savings pick up as the baby boom enters its peak earnings years, they may have high enough incomes to support continued early retirement. If not, they may choose to work longer. In fact, in recent years, legislation has been enacted with incentives for older workers to remain on the job as they approach the age at which they might begin to think about retirement, including: (1) a gradual increase in the age for full social security benefits to age 67 by 2027, (2) a gradual increase in the delayed retirement credit for workers who continue to work beyond the age for full social security benefits (to be fully phased in by about 2008), (3) liberalization of the social security earnings test (beginning in 1990), (4) elimination of mandatory retirement at age 70 under private pension plans, (5) the requirement that private pension plans allow workers to continue to accrue retirement credit if they work past the normal retirement age, and (6) reduction in the time period required for a worker to become vested in a private pension plan.

### *3. Trends in Pension Income*

Private pensions will continue to be an important source of income for the baby boom, but their importance in relation to other sources of retirement income may have been exaggerated.

Although the formation of new employer pension plans seems to have leveled off, more of today's workers will reach retirement having worked in jobs covered by a pension plan than did past generations of workers. In 1984, 40 percent of elderly household units reported receipt of pension income from public or private sources.[30] However, projections indicate that, over coming decades, growing proportions of retirees will receive pensions. For example, projections of pension receipt prepared by ICF, Inc., for the Commonwealth Fund Commission on Elderly People Living Alone indicate that about by the year 2020, 63 percent of all elderly people could receive a pension from private or public employment.[31] However, even though more elderly workers may qualify for a pension in the future, those benefits will not necessarily be large. For example, the portion of the elderly receiving a pension increased substantially from 1967 to 1984, but private-employer pensions grew to one-fourteenth of all retirement income. The ICF projections indicate that this could continue to be the case as the baby boom retires in the next century. The ICF study estimates that income from private and public pensions combined will not rise substantially above their current share of income sources of the elderly (about 15 percent). Therefore, in spite of increasing pension receipt, the pensions received by future retirees will likely continue to be modest as a share of their total income.[32]

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[30] U.S. Dept. of Health and Human Services. Social Security Administration. Income of the Population 55 and Over, 1984. SSA Publication No. 13-11871, Dec. 1985.

[31] Old, Alone and Poor, table B-5.

### *4. Projections of Future Labor Force Participation*

As labor force participation declined between the 1960s and the 1980s, earnings dropped as an income share of the elderly, and income from assets increased. The projections into the future indicate that asset income will continue to grow and that social security will remain about the same as a share of income of the elderly in 2020. Earnings will decline somewhat, with some of the share of income they currently represent being replaced by the increase in assets. However, there is also the possibility that, as more workers anticipate receiving an employer-provided pension, personal retirement savings will decline.

TABLE 4.—LABOR FORCE PARTICIPATION RATES FOR OLDER MEN, 1985–2020

[In percent]

| Age | ICF/BLS [1] | | | SSA [2] | | |
|---|---|---|---|---|---|---|
| | 1985 (actual) | 2000 (projected) | 2020 (projected) | 1985 (actual) | 2000 (projected) | 2020 (projected) |
| 55 to 59 | 79.6 | 76.7 | (3) | 79.6 | 76.2 | 74.1 |
| 60 to 61 | 68.9 | 54.0 | (3) | | | |
| 60 to 64 | | | (3) | 55.7 | 51.9 | 51.1 |
| 62 to 64 | 46.1 | 34.8 | (3) | | | |
| 65 to 69 | 24.4 | 14.2 | (3) | 24.2 | 22.2 | 19.1 |
| 70 to 74 | 14.9 | 11.3 | (3) | | | |
| 70 plus | | | (3) | 10.5 | 10.7 | 9.1 |
| 75 plus | 7.0 | 6.4 | (3) | | | |

[1] Old, Alone and Poor. Report of the Commonwealth Fund Commission on Elderly People Living Alone. April 1987. p. B–6. Projections by ICF, Inc. based on BLS data and adjusted to account for 1983 Social Security Amendments and elimination of age 70 mandatory retirement and projected to the year 2000. Labor force participation defined as the average annual participation as determined from the Current Population Survey (CPS).

[2] Economic Projections for OASDHI Cost and Income Estimates: unpublished data prepared for the 1987 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. (Based on Alternative II–B Economic Assumptions. Includes elimination of mandatory age 70 retirement and other changes made in the 1983 Social Security Amendments.) Labor force participation defined as the average annual participation as determined from the CPS.

[3] No change.

Forecasts about future labor force participation among men in their early 60s differ. For example, projections based on BLS data and adjusted to account for the new retirement legislation show that the labor force participation rate of men age 60–61 will decline by about 22 percent between 1985 and 2000 (from 69 percent to 54 percent), and that the decline among those age 62–64 will be nearly 25 percent by the turn of the century (from 46 percent to 35 percent).[33] The projections about somewhat younger men (age 55–59), however, show a modest decline of 3.6 percent in the same time period. (See table 4). Other projections show a less steep decline and a leveling of the early retirement trend. The Social Security Administration (SSA) estimates that the labor force participation of men 60–64 will decline by about 8 percent from what it was in 1985 to the year 2020 (table 4), and that the average age at which social security retirement benefits are drawn will be about the same in the early decades of the next century as it is today.

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[32] The data are generated by the ICF, Inc., PRISM microsimulation model. For the reasons discussed in section VI, these projections may overstate the growth in income form private defined benefit pension plans. These simulations also may underestimate the extent to which pensions substitute for personal savings.

### F. CONCLUSIONS

Projections of the income of future retirees are highly dependent on the assumptions used about the future of the economy and real wage growth in the next decades. The projections are based on the Social Security intermediate assumptions, and include real wage growth of about 1.5 percent annually between now and 2020, which is large enough to compensate for the periods of negative and very low wage growth today's young workers have experienced since they entered the labor force. Under these projections, it seems reasonable that the size of social security benefits will support continued current early retirement rates for future retirees.

However, the retirement decision seems to be highly conditioned by the availability of unearned income and primarily by asset income, and the decisions that will be made by members of the baby boom as they reach retirement age will depend heavily on their individual retirement savings, which also are strongly linked to real wage growth. If the economy performs more poorly in the future than the Social Security intermediate assumptions indicate, it is possible that earnings and assets, as portions of the retirement income pie, could reverse positions again, and early retirement trends could slow or reverse. If problems of income adequacy and distribution become apparent, Federal programs and policies can be adjusted as the need arises. However, to some extent, the labor force participation of older workers self-adjusts to their economic situation.

It is extremely difficult to quantify and incorporate behavioral and attitudinal changes that may occur in society into mathematical forecasting models. The important point here is that labor force participation and retirement rates in the future cannot be predicted with certainty, but are conditioned by a large number of economic and behavorial factors: labor market conditions, economic circumstances during a worker's lifetime that permit the accumulation of personal savings, availability and generosity of public programs for the elderly, and attitudes about work and retirement.

In addition, retirement trends themselves can change the relative attractiveness of retirement versus continued work. A positive correlation exists between amount of education and length of work career. Thus, the relatively high educational status of the baby boom may support delayed retirements. Furthermore, labor shortages could develop as the baby-boom generation prepares to leave the workforce. If the following generation cannot fill the demand for labor, it is likely that wages would rise, employers would restrict use of early retirement options in their pension plans, and older workers would be induced to remain on the job.

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[33] Old, Alone and Poor, p. B-6. The BLS makes no projections beyond the year 1995. The ICF, Inc. projections simply extend those done by the BLS to the year 2000, and assume that labor force participation rates beyond that time remain about constant.

## VI. Building Claims for Retirement Income

Workers and their spouses acquire and redeem the claims that allow them to have income during their retirement years in several different ways. The Federal Government has major roles in the creation and enforcement of these claims. In some instances, that Federal role is direct and exclusive, as with claims for social security benefits. Such claims are created and enforced through the Government's capacities to tax, invest, borrow and spend. In other instances, the Federal Government's involvement is indirect and depends on the decisions of others, as with claims arising in most private pension plans. These claims, though created and enforced in the private sector, often are permeated with Government involvement—through tax subsidies, Government insurance, and Government regulation.

### A. RETIREMENT CLAIMS: THE LINK BETWEEN CURRENT EFFORTS AND FUTURE INCOME

Claims for retirement income, either the public or private sector, are but promises and expectations that must be met from the society's production in a later period. In order to pay the claims, the next generation of workers has to restrict their potential consumption in order for retirees also to consume a portion of society's current output. Retirement claims thus depend upon the capacity and willingness of future generations to honor statutory and legal promises and to make use of (or buy goods or services from) property held by older people. Those conditions, in turn, depend on such fundamentals as civic order, the absence of major international conflict, and healthy domestic and global economies. Without these basic preconditions, the future society will not produce the total output that can be divided between workers (and their children) and retirees in ways that meet the latter's expectations about retirement income. Of course, when these basic preconditions are lacking—as, for example, happened in the Great Depression—warranting accumulated retirement income claims is just one of society's many dilemmas.

It is easy, but incomplete, when analyzing this process of accumulating and honoring retirement claims, to assume a "labor theory of value." This theory holds that all the production of goods and services in the economy in a given period comes solely from the efforts of the then working generation which must "share" that production with non-workers, including those in earlier, now retired, generations. This view often emerges when the retirement of the baby boom is discussed in terms of dependency ratios and economic burdens, especially in the context of whether the Nation's future labor force will be large enough to sustain the baby boom's retirement.

However, the production of a generation of workers is, to a large extent, a function of earlier generations' endowments. Those endowments take the form of capital equipment and other tangible and intangible property, and also incorporate less evident efforts, such as education of children and, for some generations, even the defense of the country's existence.

The linkage of retirement income claims on the current economy to past efforts is most evident when claims that retired individuals hold in their own accounts are examined. These claims sometimes take the form of employer-sponsored, tax-favored savings, such as defined contribution accounts. Most often, however, they are ordinary savings and investments (including housing) that individuals undertake on their own. In all these cases, individuals (sometimes with others in pension trusts) hold promissory notes or instruments of business debt, or, alternatively, they own property, corporate equity or other types of business interests. In the creation of these claims, it usually is possible to connect antecedent savings—that is, some sacrifice and deferral of potential consumption at an earlier moment—with an investment that helps create future income for retirement.

The linkage is less obvious in retirement claims that are promises to pay a pension benefit sometime in the future. Some employers make such promises in what generally are termed defined benefit pensions. These plans are subject to special trust rules dictated by the Federal Government, as well as contract law, and are tax-favored (that is "qualified").[34] These plans are complex economic understandings in which workers probably defer current compensation over long time periods in exchange for a promise of retirement income which, to some extent, the employer guarantees. Under current law, employers must attempt to back these promises—at least to the extent of the legal and actuarial benchmark of "accrued benefits"—with the same kinds of debt and equity savings that are contained in defined contribution accounts or in ordinary savings vehicles.[35]

Society's major pension promise is social security, an intergenerational understanding that operates through the Federal Government's accounts. Unlike private retirement claims that are enforceable as contracts and trusts in the courts, social security is a statutory promise; Congress can alter, or even abolish, rights to social security for workers and even current retirees. Nonetheless, it is difficult to imagine a set of conditions in which the political process would substantially dishonor social security claims unless, at the same time, severe economic exigencies—like those of the Great Depression or a period of hyperinflation—were simultaneously devaluing nongovernmental retirement claims in very substantial ways (for example, the bankruptcy of the businesses whose debt and equity are held by pension trusts).

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[34] In relatively few cases, employers and relatively well-to-do employees may negotiate so-called "non-qualified" deferred compensation agreements which usually are "unfunded". Although these agreements exist outside ERISA and the Federal tax code's special rules for retirement plans (hence, "non-qualified"), they are subject to ordinary contract law. An employer can set aside money to finance such an agreement, but any reserves must be reachable by the employer's general creditors to be "unfunded."

[35] The link between employers' funding their retirement income promises and increases in the society's overall savings and investment is not axiomatic. "Consider the result if two corporations each decide to advance fund their pension plans through cash raised by issuing debentures, and if each ends up investing its pension plan assets in the debentures of the other. Both plans are fully funded, but they have been funded through a series of financial transactions that have no effect on aggregate savings or investment." Thompson, Lawrence H. Some Observations about the Effect of Altering the Public/Private Mix of Retirement Incomes. Speech delivered at a conference on Social Security and Private Pensions: Providing for Retirement in the 21st Century, sponsored by the Institute for Law and Economics, Apr. 24, 1987.

In addition, increased savings does not necessarily lead to increased investment. It did not in the Great Depression. Before business will use additional savings for new investment in plant, equipment, or training, they must perceive that the demand for their goods and services will be expanding. Further, not all investment successfully leads to economic growth.

Although savings and property interests, in their usual sense, do not back social security, this does not mean that the program's claims are not based on antecedent efforts by its beneficiaries. At the very least, the retirees' previous payroll taxes financed the benefits paid to a yet earlier generation. In addition, depending on the Government's overall fiscal posture in those earlier periods, retirees' earlier payroll taxes may have supplemented their income taxes in helping build public infrastructure, educate and train upcoming generations, and preserve the country's existence. The correlations between a generation's antecedent efforts and its social security benefits are not easily determined, however, and can lead to simplistic descriptions of the program as just a tax-transfer mechanism that imposes "burdens" on current workers—without acknowledging the retirees' previous contributions to the economy.

### B. RETIREMENT CLAIMS IN THE GOVERNMENT SECTOR: THE SOCIAL SECURITY PROGRAM

Developed industrial societies principally provide retirement income through so-called "statutory" pension schemes. The nearly universal statutory pension in the United States is social security. (Medicare often is considered part of social security; in this report, however, medicare claims, and the Federal Government's other programs for the health care of the aged, are discussed separately. See section VII of this overview and chapter 10 of the background papers.)

Current program data and projections of retirement income into the first quarter of the 21st century show that social security is, and will continue to be, the key source of income for very large segments of the retired population. As noted in section V, income from social security accounts for nearly two-fifths of all income among today's elderly population, and in most projections will account for about that much in the year 2019. Given this stability in the program as a source of income among the elderly, the increasing number of elderly in the baby-boom cohorts (relative to the rest of the population) will cause projected program benefits to require a rising percentage of society's overall resources in the early part of the next century.[36]

Of course, any major change in the aggregate size of social security, or in its benefit formula and other entitlement provisions, could affect when most people in today's labor force choose to retire and could affect their standard of living in retirement. In addition, major departures from current policy in the program's funding—for example, "full funding" or "privatization" [37]—could affect the Government's fiscal situation, the consumption level of today's workers, and the national economy. Even if all or part of social security were privatized, as some have advocated, major changes in program financing ultimately would depend on decisions about the Government's fiscal policy requirements, rather than on technical formalities about funding.

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[36] In 1983, social security expenditures were about 5 percent as a fraction of the GNP; for 1987, they are estimated at 4.73 percent of GNP according to the intermediate projections of Social Security's Board of Trustees. Because of favorable demographics over the next two decades, the program is estimated to fall as a fraction on GNP to about 4.25 percent in the year 2005, just before the earliest cohorts in the baby boom begin to draw retirement benefits. By the year 2035, when the baby boom will have its greatest net impact on the program, estimates are that the program will grow slightly over two percentage points as a fraction of GNP to around 6.51 percent and then decline somewhat. Thus, compared to recent experience, social security is projected to increase by about 30 percent; compared to its relatively low point in 2005, it is projected to increase by 53 percent over a 30-year period.

Even though issues of distributional equity in social security are not directly related to aggregate social security benefits for the baby boom, they are discussed briefly here because they define, in part, the program's objectives. As social security cost and funding issues are considered in anticipation of the baby boom's retirement, the program's basic distributional issues likely will be part of the debate.

### *1. Financing the Baby Boom's Social Security Retirement Claims*

Probably the most discussed issue in debates about the baby boom's aging and future retirement is the funding of its social security claims.[38] The first part of this section describes the implications of the funding methods inherent in current policy. Following that description, the effects of current policy, possible alternatives to that policy, and the relationship of the program's projected size to society's resources will be discussed. (Chapter 8 of the background papers presents a more comprehensive analysis of these issues.)

*a. The creation and payment of social security claims.*—Social security rests on the concept of "covered earnings." Those earnings—91.5 percent of all employment income in 1985—define the base on which benefits are calculated. Except for some already legislated decreases in the level of benefits taken before "normal" retirement, the social security benefit formula is designed to produce constant replacement rates over time. This means that social security benefits received by successive cohorts will remain constant as a percentage of indexed lifetime earnings. However, because each cohort's earnings history is projected to be higher than that of its predecessor, each cohort is also projected to receive benefits that are higher in terms of absolute purchasing power.

In addition, covered earnings define the base on which payroll taxes are levied to finance the program. Those taxes are not set aside to finance an individual's future benefits, but to finance current benefits.[39] Hence, the program's financing typically is characterized as "pay-as-you-go." The program is said to be in "acutarial balance," when the sum of its future income over the next 75 years approximately equals the sum of its future costs over the same period. Even though these two sums are currently estimated as being roughly equal to one another, the program's reserves are projected to fall below those necessary to pay full benefits in the year 2051, some 10 years before the end of the projection period.

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[37] Chapter 8 of the background papers discusses these alternatives to current social security policies.

[38] In addition to the 1987 Annual Report of the Social Security Board of Trustees (especially tables 26, 27, 29, F1 and F2), this discussion relies upon Actuarial Note 130, April 1987, Long-Range Estimates of Social Security Trust Fund Operations in Dollars, by Harry C. Ballantyne, A.S.A., Chief Actuary, Social Security Administration.

[39] Income taxes raised from the partial taxation of social security benefits among high income beneficiaries are also used to finance the program's current operations.

Although not funded in the sense that private pensions are, social security can have reserves in its trust funds and, therefore, may be thought to be partially "advance funded." To the extent that a given year's trust fund revenues exceed the year's current cost for benefits and administrative expenses, the "surpluses" are posted to the Social Security trust fund accounts. By law, these surpluses are invested in Federal Government obligations.

In a period, such as now, when the Federal Government's budget (excluding social security) is in deficit, payroll tax surpluses effectively are being used to decrease how much the Federal Government otherwise would have to borrow from domestic or foreign investors. Thus, social security payroll taxes that exceed current benefit outlays help support the rest of the Government's operations. If the Government budget were otherwise in balance or were running a surplus, these excess payroll taxes would help decrease the amount of outstanding debt held by the Government's creditors. Under these conditions, the Federal Government would be retiring its so-called "debt held by the public" (or external debt) while simultaneously creating larger amounts of debts held by Government accounts (or internal debt) in the Social Security trust funds.[40] In years when payroll taxes alone are not sufficient to cover social security benefits, some combination of payroll taxes, interest from the trust funds or a draw-down in trust fund reserves is used to make payments. Interest on the trust funds or their liquidation, along with all the other current year obligations of the Federal Government, ultimately must be financed by the Treasury from other (nonpayroll) taxes or, if necessary, by sales of Government assets and borrowing from domestic and foreign investors. To the extent that the Federal Government obligations in the form of trust fund reserves are redeemed by nonpayroll tax sources of funds, then the trust fund reserves are another form of "pay-as-you-go" Federal financing—although one that rests on a broader base than the payroll tax. (As discussed later, the Treasury could use trust fund surpluses to purchase non-Federal debt. The Treasury could then sell that non-Federal debt at a later date to help redeem its obligations held by social security.)

*b. Current policy: partial advance funding.*—Until recently, the policy consensus was that Social Security trust fund reserves should be high enough to allow the program to weather a recession. In other words, in exchange for having levied more payroll taxes than were necessary to pay benefits in previous years of healthy economic growth, the social security system was given budgetary resources to pay full benefits in a period of economic downturn.

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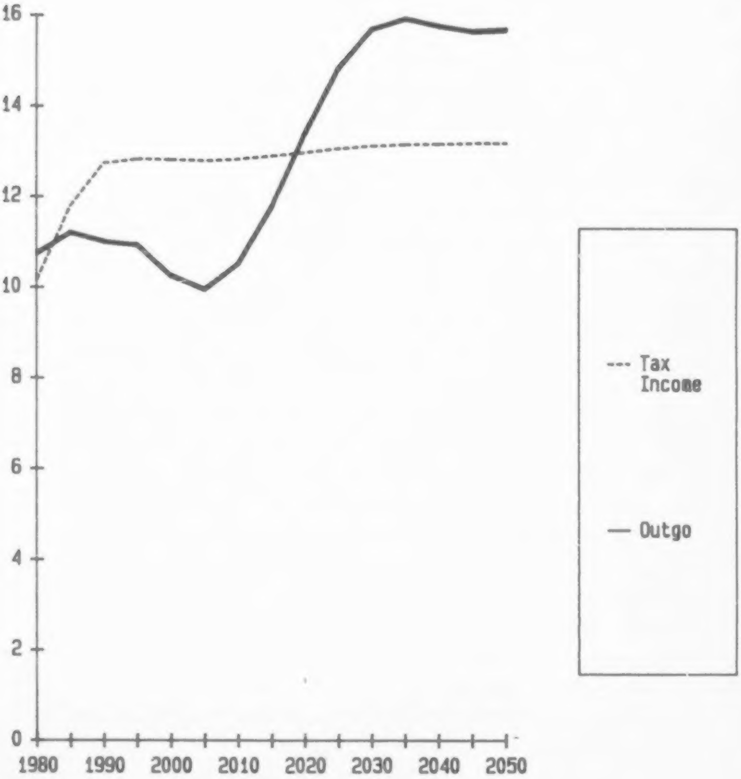
[40] Since the passage of the Balanced Budget and Deficit Control Act of 1985 (Gramm-Rudman-Hollings), the Social Security program is no longer part of the unified Federal budget. However, its taxes and expenditures are still used in defining the targets in that Act and compliance therewith. To simplify this discussion, Social Security, though an "off-budget Federal entity," is treated as any other Federal Agency would be.

Over the past decade, however, the concept of trust fund reserves has been broadened in order to facilitate funding of the baby boom's retirement while, at the same time, keeping the social security payroll tax constant for a very long time. The possibility of another short-run trust fund deficiency, however, cannot be summarily dismissed. Payroll tax increases are scheduled for 1988 and 1990, and if the Trustees' intermediate economic assumptions hold, the trust fund will build up by increasing amounts all during the 1990s. Even under the Trustees' pessimistic assumptions, a buildup, though somewhat smaller, will occur. However, a serious economic recession in the early 1990s could create trust fund problems even with the scheduled tax increases.

The 1977 and 1983 Social Security Amendments formalized this concept of using the trust fund reserves to finance the baby boom's retirement. The 1983 law stipulates that the combined employer-employee payroll tax for social security cash benefits will increase, in two steps, by 1 percentage point from 11.4 percent in 1987 to 12.4 percent in 1990 and thereafter will stay fixed at that rate for the indefinite future. Projections based on the intermediate assumptions show annual payroll taxes (and income taxes paid on benefits) exceeding benefit outlays during a "first period" that extends from 1987 to around the year 2018. In this period, tax revenues in excess of social security's current expenditures are estimated to increase from around $15 billion in 1987, to over $60 billion in 1996, and to amounts in the $100 to $200 billion range in years 2000 to 2015. These surpluses are so large that trust fund balances by then are estimated to grow to approximately $7 trillion. Thereafter, in a "second period" extending from around 2018 to 2050, each year's benefit outlays are estimated to exceed payroll taxes and income taxes paid on benefits. Figure 4 projects social security expenditures and revenues (from payroll taxes and taxation of benefits) as a percent of taxable payroll. These projections show a similar pattern to those in figure 2 above (page 34) but provide a more standard measure of social security financing than the program's cost as a percentage of the GNP. (These distinctions are analyzed in chapter 8 of the background papers.)

Figure 4.
Social Security Trust Fund
Income and Outgo

As a Percent
of Taxable Payroll



Source: Social Security Administration. Long Range Estimates of Social Security Trust Fund Operations. Actuarial Note 130. April 1987.

However, the Treasury's annual interest payments to the trust funds are projected to be large enough to cover the system's annual shortfalls between current taxes and current outlays until 2032, and to continue to build up the trust funds—which are projected to peak at over $12.5 trillion in 2032. From 2032 to 2040, the combination of current tax revenues, interest, and a gradual drawdown of trust fund reserves is estimated to cover outlays. Projections then show trust fund reserves depleting rapidly between 2040 and 2050, becoming exhausted by 2051.

During the first period, excess payroll taxes will help finance the rest of the Federal Government's operations, and will permit some unknown combination of lower revenues from other taxes, less external borrowing, higher spending on other programs, and fewer sales of Federal assets. In addition, if allowed to build up, the excess payroll taxes conceivably could help decrease the amount of existing Federal debt held by the public that must be rolled over. If Congress chose to do so, it could even allow the Treasury to purchase non-Federal debt from the private sector, State and local governments, or even possibly in foreign enterprises.

In exchange, however, some combination of more revenues from other taxes or more borrowing will be necessary in the second, post-2018 period, not just to finance the rest of the Government (assuming no substantial cutbacks), but also to pay for social security benefits from the interest on the bonds that have accumulated in the trust funds and eventually to redeem them as they are being constantly presented to the Treasury by the Social Security program in the 2032 to 2050 period. If the Federal Government used some first-period surpluses to purchase non-Federal debt, those financial instruments could be sold in the second period, thereby lessening the amount of higher taxes, net borrowing, or decreases in other Federal spending that would be necessary.

The economic and budget implications of this projected trust fund buildup depend on policy decisions concerning the overall Federal sector and the entire economy. For example, the surpluses of the first period could be used to increase national savings and, therefore, capital investment and economic growth. As discussed in chapters 4 and 8 of the background papers, this will happen if the surpluses are used to replace some or all of the Federal Government's existing privately held debt—that is, only if the Federal Government as a whole is running a surplus. The monies that the Federal Government would no longer be borrowing, therefore, would be available for private sector investment. If, on the other hand, the social security surpluses are used indefinitely to cover deficits in the rest of the Government's operations, they will not contribute to national savings. (However, if social security surpluses prevent additional Federal deficits from occurring, they will help contain the recent pattern of "dissaving" by the Federal Government.)

Similarly, the overall fiscal effect of having to redeem the trust fund's Treasury obligations in the second period will depend on the level of other Government spending. If other non-social security spending were cut back in the second period, taxes from other sources, external borrowing, or sales of Government assets would have to be increased as much.[41] As discussed in section III and in chapter 4 of the background papers, robust economic growth and large savings over the next several decades could help, by broadening the base on which taxes would fall and by permitting a period of relatively low national saving (including the re-creation of a relatively large amount of external Federal debt.)

At some point, however, the large social security reserves postulated in current law could pose difficult policy choices. If policymakers desire to increase national savings, social security surpluses over the next quarter century could be used to reduce the Federal Government's external debt. The projected annual social security surpluses are so great that the Federal external debt—assuming that general fund deficits cease from the mid-1990s on—probably could be brought completely within the Social Security trust funds by 2010.[42] During the same period, the combination of inflation and economic growth would be decreasing the real value of this debt and its size relative to GNP.

Under the conditions described in the previous paragraph, the external Federal debt would be retired by around 2010. Then policymakers would have to decide whether the Federal Government as a whole should continue to be a net saver, or whether it should move back toward annually balanced budgets on a unified (i.e., including social security) basis. In either case, the law would still require the Treasury to continue to issue new Federal securities to social security in the amount of its additional annual surpluses. If the Federal Government overall should continue to be a net saver, then the Treasury would be accumulating large amounts of cash from the surplus payroll taxes. Assuming appropriate congressional authorization, the Treasury could use those amounts that it was receiving from social security to purchase non-Federal debt. These Federal Government investments then would become part of a Treasury "portfolio" that could be sold when the trust fund reserves were scheduled to be drawn down.

Alternatively, policymakers could decide to keep the Federal Government as a whole in balance. The non-social security part of the Government would incur deficits in the amount of the additional Federal obligations being annually issued to social security. Of course, any number of intermediate positions would be possible with some of the social security surpluses being used to cover other Government operations and some used to purchase non-Federal debt.

The extent to which the Federal Government should become a net saver and for how long will depend on the condition of the overall economy. It is not possible to determine in advance exactly what the policy should be. By itself, curtailment of increases in its external debt, and its subsequent internalization, would represent a major swing in the Federal Government's fiscal position, from being the largest net dissaver in the society to being the largest net saver.

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[41] While it is highly problematic to speculate on the overall level in Federal spending 20 years hence, from the current perspective there is little ground to believe that very much flexibility will exist. Other Federal spending on the elderly, especially on health care, also likely will be increasing. Further, given the history of this century, there is little reason to believe that the Nation's national security and international commitments will be much less than they are now.

[42] If the Gramm-Rudman-Hollings target of a balanced budget, including social security outlays and taxes, were met by the early to middle 1990s, then the Federal Government's debt held by the public would level off at around $2 trillion to $2.5 trillion.

Ownership of large amounts of non-Federal debt by the National Government would add complexities to the policy process. Federal policymakers might become more susceptible to arguments to prop up otherwise failing enterprises (or, conceivably, the financial position of State, local, or even foreign governments). In addition, ownership of large amounts of non-Federal debt possibly could complicate the Federal Government's latitude in fiscal and monetary policy. If the Treasury began to buy equity or other property rights with its "extra" cash from social security, then the Federal Government might become a direct participant in market decisions.

c. *Variable payroll tax.*—Under current law and all sets of assumptions, increasing costs of social security are unavoidable in the post-2010 period. The preceding analysis describes one way, now in current law, for allocating these costs between payroll taxes and other sources. An alternative method would finance the program year-by-year from payroll taxes, allowing only for a small trust fund to weather recessions. Under this plan, the payroll tax rate would be lower than that in current law over the next 20 years, but then it would climb steeply thereafter, peaking at around 16 percent in the year 2035 under the intermediate assumptions.

Assuming the same level of aggregate Federal Government spending and borrowing over the two periods discussed earlier, the only fiscal difference between this scenario and current policy is that other nonpayroll taxes would be higher in the first period (1987-2018) and lower in the second period (2018–2050). The extent of national saving in the first period would depend on the Federal Govenrment's overall fiscal posture—that is, all taxes and all spending—and the accommodation in the second period would depend on the same choices about all Federal spending, the level of total Federal taxes, and how much external debt to create.

This approach has some advantages. From the point of view of tax equity and concern for stability in the structure of the Government's nonpayroll taxes it might be preferable. This strategy would place the perceived "burden" of adjustment to the baby-boom retirement bulge on the payroll tax, rather than on other taxes.

On the other hand, financing the baby boom's social security claims by relying on a payroll tax that declines from its current 11.4 percent to less than 9.94 percent in 2005, and then rises to 16.06 percent in 2035, could create perceptions of unfairness among those who use the concept of "rate of return" on payroll taxes as a measure of the program's equity. A constant pay-roll tax rate of 12.4 percent is comparable to—even significantly less than—what social security benefits would cost, on average, if it were a private sector defined benefit plan. A payroll tax of more than 14 percent, however, would exceed that benchmark.[43]

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[43] Using the "entry-age normal cost" funding methodology, the Social Security actuaries have estimated that, as a percent of payroll, the annual contribution cost of social security would be about 13.7 percent for young workers now just entering the labor force. The estimate is a pre-

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*d. Privatization.*—Similarly, the ultimate policy choices would not be necessarily altered if social security were, in whole or in part, "privatized." For example, assume that all employers and workers were required to begin paying their payroll taxes to private entities that would be required to provide benefits comparable to the existing Social Security program. Without those payroll taxes, the Federal Government would be unable to pay for current benefits unless it also cut other spending, raised other taxes, or increased its external borrowing by very large amounts to make up the difference. If the Federal Government relied mostly on the borrowing alternative, it would simply borrow back the monies it had just channeled into the private sector. In effect, the private entities that were managing this new privatized pension system would find themselves with portfolios consisting of Government bonds. Such portfolios are as much "pay-as-you-go" in nature as reliance on a statutory payroll tax. Proposals that would partially privatize social security, without cutting existing benefits, inherently contain the same potential private sector effects.

These choices are not new. The same concepts and debates arose in the 1930s when the system was started and in the early 1950s when it was largely revamped. In these years, the alternatives were to pay very small social security benefits for some 30 to 40 years while claims (and funding) were slowly increasing, or to impose two taxes on the then working population—one to pay for the cost of current benefits, and one to advance fund future benefits. It also was recognized then, as now, that any advance funding of future benefits with Federal Government debt would be another form of pay-as-you-go financing and that trying to advance fund benefits otherwise could entail large scale ownership by the Government (or by entities tightly regulated by the Government) of private sector debt and, possibly, equity. Further, then as now, potentially negative macro-economic consequences of large net savings by the Federal Government were recognized.

*e. Explicit general revenues.*—One way to avoid the roller-coaster effect of variable payroll taxes described earlier would be to place a cap on the tax rate and finance any difference with general revenues. One possible ceiling on the payroll tax rate might be the cost of the system if it had been financed on a fully funded basis from the beginning (currently estimated as 13.7 percent). Or a different rate ceiling could be chosen. Alternatively, a completely different rationale for partial general fund financing could be adopted. One plan, to finance one-third of the program's annual costs with general revenues, has often been suggested.

A decision to finance social security benefits explicitly through payroll taxes supplemented by general revenues would have long-run fiscal effects similar to current policy with its implicit reliance

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liminary one for the program as valued in the 1987 Trustees' Report. (See Long-Range Estimates of the Financial Status of the Old-Age, Survivors and Disability Insurance Program, 1983, Actuarial study No. 91, table 19, p. 96, for the comparable estimate of the program as of the 1983 Trustees' Report.) Actuarial estimates of pension costs are extremely sensitive to assumptions, especially interest rate assumptions. Consistent with other aspects of the intermediate II-B assumptions, the Social Security actuaries assume a long-run 2 percent real interest rate. Other analysts, who have used higher real interest rate assumptions (for example, 3 percent), have arrived at the very different conclusion that virtually all of today's workers are net losers in social security.

on general revenues from the Treasury after 2018 in the form of large interest payments and the eventual liquidation of trust fund reserves. However, the key link in current policy to a visible antecedent sacrifice in the form of higher payroll taxes between now and 2018 would no longer exist.

*f. The reemergence of the long-run financial imbalance.*—Within the next decade, there almost certainly will come a point at which the constant 12.4 percent payroll tax in current law will be reported as being insufficient for the program to be in actuarial balance over the 75-year projection period. This will happen because in each successive valuation of the program, a relatively "bad" demographic year in the distant future will probably be substituted for a relatively "good" demographic year in the present. However, unless the underlying demographic and economic assumptions change, the time at which the trust funds are estimated to be depleted will remain roughly 2050. If Congress nonetheless considers the actuarial balance over the entire 75-year projection period to be important, it will face the usual array of choices: (1) increase payroll taxes (in the future), (2) schedule future benefit reductions, or (3) enact a provision for the infusion of general revenues into the system, also in the future.

Because the current payroll tax is less than the cost of the program's benefits using private pension valuation methods, a rationale could be developed for resolving the 75-year financing issue either by increasing payroll taxes to around 13.7 percent, or by cutting benefits payable to retirees in the future.[44] Benefit reductions could be calibrated so that the lifetime present value of benefits would not exceed the present value of lifetime payroll taxes at 12.4 percent. The result of this alternative would be a less generous system—for example, lower constant replacement rates—for those who retire after 2050.

### *2. Social Security Costs in Perspective of Society's Resources*

Ultimately, decisions about the long-run future of social security are likely to be made on the basis of its total costs, relative to the entire economy and the overall Federal sector, rather than its funding mechanisms. The cost comparisons are often rendered more meaningful when costs are expressed as a proportion of GNP.

Based on the intermediate assumptions, the cost of social security as a percent of GNP will rise from 4.73 percent in 1987 to 6.51 percent in 2035—an increase of 38 percent. During this same time, the elderly as a percent of the population will increase faster, by nearly 75 percent. The slower growth in social security costs occurs because the long-run projections assume that greater amounts of compensation will continue to shift into nonmoney wages (e.g., health insurance). Social security replaces only money wages, and thus declines relative to total compensation. If the projected trend away from wage and salary compensation does not continue, social security costs as a percentage of taxable payroll would decline. Accordingly, social security would have a more favorable long-run actuarial balance, but would command a larger share of future GNP.

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[44] See Footnote 43 above.

High rates of economic growth do not eliminate the need to make choices about the relative size of the Social Security program in comparison to the GNP. Greater economic growth means a higher real wage growth rate, which, under current law and assumptions means that the absolute value of claims in the program will be larger as well. Higher economic growth does increase the denominator (the future tax base) more than it does the numerator (benefit claims) because a lag exists between the accrual and payment of benefits, and because social security benefits, after retirement, are indexed only to inflation (as opposed to wage growth, which usually has outpaced growth in prices). Nonetheless, the net result is to lower the relative size of the program, as a percent of payroll or GNP, only slightly compared to what would occur at a lower level of economic growth.

As discussed in section IV above, the increased GNP percentage going to social security will occur in a context in which Federal spending on the elderly will be increasing as well. The cost of social security benefits will rise, but, if present trends continue, not as rapidly as medical care spending.

### *3. Social Security Distributional Issues*

Future Congresses will be faced with distributional as well as funding issues in the social security program. These issues, some as old as the program, are independent of the issue of the baby boom's retirement and, for that reason they receive less analysis in this report. However, proposals to resolve the issues often are linked to concerns about the program's long-run financing.

In particular, questions are raised about the current program's distribution by household type, earnings, and income class, and about the tradeoff between benefits payable in the time in which both spouses are alive and the time in which only one is still alive.

*a. Distribution of benefits by household type.*—The Social Security program gives more benefits, relative to past payroll taxes, to households in which one of the two spouses is not in the paid labor force or has much lower wages than the other. The benefit cost ratios are comparatively low for never-married single people and for two-earner households. These differentials reflect a "social adequacy" principle of the program—that workers with "dependent" spouses need higher benefits. As women's role in the labor force has changed, however, the need and fairness of these earlier social policy decisions have been questioned. In addition, determining equitable distributions of social security retirement claims in the event of divorce is often raised as a program policy issue.

*b. Distribution of benefits by income.*—Since their inception, social security benefits have been tilted in favor of lower-wage workers. Questions about this aspect of the program usually have been raised indirectly, in the context of possible negative effects on work effort, and in the context of whether workers, especially higher-wage workers, would receive a greater return on their payroll taxes if they were allowed to invest them in the private sector.

Concern about these issues will be expressed regardless of the overall size of the program or how the baby boom's benefits are funded. These differences across income classes result from antecedent legislative judgments about income adequacy in old age, and the capacity of lower-income workers to save for retirement relative to their other financial responsibilities.

These distributional issues also exist in the wider contexts of fiscal constraints and overall Federal retirement income policies. If higher income workers were allowed to leave the program to obtain higher rates of return, their diverted payroll taxes would have to be offset by reductions in benefits to current retirees, increases in other taxes, cuts in other Government spending or additional Federal borrowing—choices which may not be easy to make. The tax advantages associated with qualified employer-sponsored plans and IRAs are more valuable to higher income workers, and these partly offset high earners' comparative disadvantage in social security. In addition, compared to the income tax rules normally applicable to pension benefits, social security benefits are very lightly taxed, an advantage which also counteracts the tilt in the benefit formula.[45]

*c. Longevity trade-offs.*—Increasingly, there is a tension in social security between allowing individuals flexibility over the timing of their benefits and the need to preserve some of a couple's social security "wealth" for the increasing probabilities that people will be living to relatively advanced ages. Very often, this comes down to a trade-off between benefits before the "normal" age of retirement (benefits that are payable between ages 62 and 65) and the level of benefits payable to the surviving spouse. Women live much longer than men, on average, and the difference is likely to increase in the future. Since women usually become widows, they may be more concerned about the level of surviving spouse benefits. Conversely, men may be more concerned about the level of early retirement benefits.

## C. PRIVATE SECTOR RETIREMENT CLAIMS

In addition to programs like social security, developed countries have created complex structures for the private provision of retirement claims. Almost all major employers in the United States sponsor pension plans and this sponsorship has been encouraged by the Federal Government through favorable tax treatment. The Federal Government also is heavily involved in the supervision of such plans: by placing conditions on the use of the tax advantages, by regulating fair labor practices, and by serving as an insurer. However, most private sector income and wealth that households have in retirement is traceable to ordinary savings and asset accumulation rather than from employer-sponsored pension plans.

This section reviews projections of private retirement income for the baby boom, and the funding of these private claims. It is followed by a brief review of issues in private pensions that exist independent of financing the baby boom's retirement.

### *1. The Size and Funding of Baby-Boom Private Retirement Claims*

Discussions about the retirement of the baby boom sometimes conclude that these cohorts may not have "enough" retirement income claims in the private sector and, therefore, that they may press Congress to increase social security benefits or to strongly resist benefit cutbacks that might be proposed because of the heavy cost of the program to the Federal budget or society at large.

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[45] Though higher-income beneficiaries must now include 50 percent of their benefits in taxable income, they still retain an advantage compared to the usual conventions of income taxation, which would dictate inclusion of roughly 85 percent of benefits in taxable income.

As noted in section V, however, available projections based on this assumption of steady economic growth suggest that the baby boom could have a higher retirement standard of living than today's elderly, at least in terms of absolute purchasing power.

But these projections may paint too rosy a picture about the baby boom's private retirement claims. First, their rates of increase in real household income over their prime working years have been lower than previous cohorts. The combination of sheer numbers when the baby boom entered the labor force and the external shocks of the 1970s and early 1980s kept their real income relatively low. Hence, until now their retirement claims have been generated on a wage base that is not growing very much.

Second, many in the baby boom have responded to these economic dilemmas by postponing marriage and having fewer children later in life. This behavior affects the potential of retirement savings in offsetting ways. On the one hand, by having fewer children than their parents, many in the baby boom may be able to save more for their retirement. On the other hand, the delay in having those children may leave them with a relatively short period between their children's departure from home (or, in many cases, completing college) and their own retirement. For many of today's elderly, such a hiatus in their 50s allowed them to save large amounts for retirement. That may be difficult or impossible for many in the baby boom. Given that few in the baby boom appear to have compensated with higher retirement savings before becoming parents, the net result may be lower lifetime retirement wealth.[46]

Third, many in the baby boom will live longer, into their late 70s and 80s, relative to earlier generations, but they may not be saving in anticipation of greater longevity. Individuals could be saving enough to retire at a relatively high standard of living at approximately the same age as did their parents or older siblings, but they may be failing to assure enough assets to maintain the surviving spouse, usually the wife, at an adequate living standard as longevity rates increase. Private pensions and social security alike face the trade-off of allowing individuals and couples flexibility about the timing of their retirement income and the need to protect the interests of the surviving spouse. Research to date has not yielded definitive findings on the extent to which couples may be shortsighted about how long they will live as a couple in retirement, and how long one may outlive the other.

Fourth, some major defined benefit plans that generated large retirement benefits for previous cohorts may be unable to weather the changing environment of the domestic and global economies.

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[46] It is also sometimes argued that the savings rates of the baby boom are low because they are profligate consumers. Given that most workers in the baby boom are still in the period of their lives in which they are accumulating household durables and such, this may be a premature indictment. Their savings rates may increase as they enter their peak earning years.

Employees of these companies may be planning on higher pension benefits than they will receive.

Fifth, as the baby boom enters their peak saving years, total savings may be so large as to depress the rates of return received on those savings, especially when compared to the rates of return that current retirees have received (on their housing, for example). For the same reason, the baby boom might experience some capital losses on their savings at the time of their intended retirement that they did not fully anticipate.[47] On the other hand, a national shift to a path of high savings and investment might increase the baby boom's wages, causing increased retirement contributions from wages that would make up for any lower return on capital.[48]

Finally, the baby boom's retirement assets will be affected by the savings from previous generations. Much of the increase in retirement wealth and assets experienced by the current generation of retirees probably was not fully anticipated and, accordingly, it may not be fully consumed before they die.[49] Thus, the baby boom may inherit significant bequests of unanticipated retirement wealth accumulated by current retirees.

Federal policies designed to induce or mandate more private retirement savings may not necessarily be effective. Much of the retirement savings that workers accomplish through tax-favored employer-sonsored plans and IRAs is offset by smaller savings through other means.[50] Sometimes the offset takes the form of greater borrowing, such as larger mortgages. In these "tax arbitrage" cases, the Government loses revenues, and neither individual workers nor the Nation is, on net, wealthier.[51] Similar offsets probably would occur if minimum pension benefits were mandated, except among lower-wage workers and younger workers just getting started and who are least able to save. For them, a mandated pension probably would lower their current disposable incomes, which, given their situations, might not be helpful. Nor would the tax advantages associated with a tax-favored pension plan be very valuable to them.[52] Further, younger workers might offset their extra retirement wealth by more borrowing or less saving later in their lives.

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[47] Given a relatively closed economy, the possibility of these outcomes would be increased if the social security system were used to achieve a very large amount of collective savings through the governmental sector (see the discussion above).

[48] These economic factors, however, will be greatly influenced by the U.S. position in the global economy. The rate of return on the baby boom's retirement savings will depend, to a large extent, on the borrowers and purchasers of the baby boom's assets who live beyond the confines of this Nation. So also, their wage patterns will be influenced by the wages paid to workers in other industrialized and developing countries.

[49] The current generation of retirees also may be preserving large amounts of their wealth for the contingency of having to pay for spells of long-term care. In addition, bequest motivations within families may be influencing how much current retirees are consuming their assets.

[50] The generally accepted view is that workers covered by employer-sponsored plans "pay for" or "save through" such plans by having other parts of their compensation reduced. For a discussion of the alternative theories of how workers bear the costs of employer-sponsored retirement plans, see CBO, Tax Policy for Pensions, p. 87-94.

[51] See chapter 7 of the background papers for a more comprehensive discussion of this issue.

[52] For a description of the tax advantages of qualified plans, see footnote 14. For a discussion of how the tax advantages affect retirement income and the distribution of that effect, see CBO, Tax Policy for Pensions, chapters I and VI.

### 2. *Issues in the Distribution and Risks of Private Retirement Income Claims*

The Nation's system of private retirement income claims faces other potential difficulties and choices. This section briefly highlights these issues, which are more extensively discussed in chapter 9 of the background papers.

*a. Coverage and job tenure differentials.*—Workers who have participated in employer-sponsored retirement plans over their lifetimes typically have more retirement income than those who have not. Pension recipients, however, are not better off than others by the full amount of their pensions, which means that they probably have reduced their other retirement savings. Thus, to some extent, concerns about pension coverage may be misplaced; without coverage in a formal plan, individuals nonetheless appear to save for retirement; with coverage, individuals appear to reduce their other savings for retirement.

However, workers in employer-sponsored plans (and IRAs) receive before-tax rates of return on their retirement savings. Thus, at the very least, they are able to garner more retirement wealth on their savings for retirement. In addition, it is possible that the tax advantages in employer-sponsored plans and IRAs may induce some people to put aside more money for their retirement as well. Implicitly, however, all citizens pay for their greater retirement wealth built up in tax-favored plans through some combination of higher taxes, less Government services, and greater Federal borrowing. To the extent that gains in retirement wealth traceable to the tax advantages are not distributed widely among workers, the outcomes can be questioned in terms of both retirement adequacy and tax equity. In particular, groups who typically receive lower wages and have more intermittent work histories—for example, women and minorities—appear to receive the least from pensions and their tax advantages.

*Differences across income classes.*—Generally, private sector benefits and particularly their tax advantages are skewed toward higher-income workers. Part of the skewing in the tax advantages reflects the higher income tax rates faced by higher-income workers; any tax advantage, by definition, is greater for them. As discussed before, some of the relative advantages that upper-income workers enjoy in private retirement savings is offset by their relative disadvantages in the social security system.

*Differences within income classes.*—Within any given income class, the tax advantages are concentrated among workers in industries and firms that sponsor relatively generous retirement plans. In addition to the problem of uneven sponsorship of plans, employer-sponsored defined benefit plans, as might be expected, are comparatively generous for long-service workers and not very generous for short-service workers. So also, these plans have been more generous to older workers and often not very meaningful for younger workers. Participation, vesting, and integration rule changes made in the 1986 Tax Reform Act and other recent legislation will reduce some of these differentials. In addition, however, differentials exist for workers who have the same amount of job tenure under a defined benefit plan, but completed during different periods of their working careers, especially if that job tenure occurs in the early or middle portions of an individual's working life. This happens because pre-retirement inflation reduces the value of benefits earned under a defined benefit plan if they are not based on a salary received shortly before retirement.

Pension differences that result from job tenure differences are not necessarily unfair. They may reward long-service workers whose stability and expertise make the employing firm more profitable and, therefore, able to fund larger pensions. Alternatively, short-service and younger workers, who may be subsidizing the relatively large pension accruals of long-service and older workers, may at some later date also be subsidized. These are empirical questions, but to date analyses have not determined how lifetime differentials are clustered and the extent to which they can be explained by productivity differences among industries and particular employers.

Job tenure differentials, however, also affect the distribution of the tax advantages associated with qualified plans. Arguably, therefore, access to tax-favored savings should be more broadly available and less conditional on the decision of employers to sponsor plans. On the other hand, greater access may not be achievable in ways that satisfy other social concerns—such as effects on the deficit or the distribution of the tax burden. This leads some to argue that the tax advantages for employer-sponsored plans should be curtailed, even abolished.

In particular, the extent to which defined benefit plans should be allowed to skew tax benefits to long-service workers has been questioned. However, this skewing in tax advantages may be the price that has to be paid to maintain defined benefit plans, an institution which many regard very highly for economic and social reasons.

*b. Continuing risks in retirement income claims.*—Much of public policy for pensions is directed to minimizing risks. For example, ERISA requires prudent management and diversification in the portfolios of defined benefit plans, and the PBGC exists to assure benefits will be paid in underfunded plans that employers terminate for reasons of economic distress. ERISA's diversification rules are intended to reinforce the overall fiduciary responsibilities of plan sponsors and to assure that workers' retirement benefits are not exclusively tied to the economic fortunes of the plan sponsor. Despite Federal law directed at minimizing risks in retirement income claims, workers still face many contingencies in their retirement savings.

*Effects of job mobility and plan termination.*—In addition to the contingency that follows from the effects of job mobility on benefits from pension plans (including the associated tax advantages), workers are not assured that their employers will continue pension plans until they retire. Early termination of a defined benefit plan can profoundly affect what workers will actually receive relative to their expectations. If the workers assumed that the plan would remain in place and reduced their other savings accordingly, they may suffer large unexpected losses. Even in circumstances in which a successor plan of comparable generosity is established, the new plan's funding situation initially will be less secure. The legitimate expectations of workers in defined plans underlies the current debate over employer discretion about terminations, and the rights of employers and workers in plan assets that remain after a plan's termination.

*Portfolio diversification.*—Except for money purchase pension plans, current law does not require defined contribution plans to diversify their assets. Although ERISA diversification requirements presumptively apply to money purchase plans, the requirement can be overcome if the plan is established as an Employee Stock Ownership Plan (ESOP). As a result, the value of a defined contribution plan may be concentrated in the sponsor's assets.[53] Extra tax advantages, over and beyond the ones that qualified plans normally have, have encouraged some companies to reconstitute their retirement plans as ESOPs. Given that one of the key motivations behind ERISA was to unlink the fate of workers' retirement incomes from those of the sponsor, some argue that current policy is contradictory with respect to the funding of defined contribution plans, especially ESOPs.

*Inflation and other investment risks.*—Claims that workers have accumulated in defined contribution plans (or other savings vehicles) are vulnerable to inflation risks, especially in periods like the late 1970s and early 1980s when inflation outstripped interest rates. Similarly, unexpected downturns in the economy, especially in the stock market, can impose unanticipated losses on defined contribution accounts. These can be especially disruptive if they occur just prior to a worker's intended retirement.

The inflation risk differs for workers who are continuously employed under one defined-benefit plan and for workers who are covered by a series of defined benefit plans with different employers. For workers who are currently employed under most defined benefit plans, the risk of unanticipated inflation and other investment risks is borne by the employer. In contrast, however, the benefits that are payable to former workers who have vested rights in a plan but have since left it for another job will be sustantially devalued during a period of high inflation. In addition, if an employer closes down its defined benefit plan during a period of high inflation or economic downturn, or feels forced to terminate the plan as too risky or costly, the workers may experience unanticipated losses relative to their long-run expectations, even in cases where their accrued benefits have been fully funded.[54]

Finally, retirees drawing benefits from either a defined contribution or a defined benefit plan can lose from unexpected inflation. In addition, retirees who are drawing down defined contribution accounts can suffer investment losses to the extent that those assets have not been fully "annuitized" (used to buy a life annuity from an insurance company).

Most risks of inflation or market reversals can be minimized by portfolio diversification, and they can be virtually eliminated by investment in short-term Government securities (with, however, a cost in a lower real interest rate over the longer term). However, periods of "negative" interest rates for Government bonds have raised concerns about their use as pension fund investments. To remedy this situation, there have been suggestions for "indexed" Government bonds, pegged to the inflation rate plus a real interest rate add-on determined through the normal auction process. To the extent that private retirement savings may be increasingly reliant on defined contribution accumulations, indexed Government bonds may be needed to add a new measure of stability to retirement expectations.

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[53] A provision in the Tax Reform Act of 1986 requires ESOPs to diversify some of the assets in the accounts of older workers.

[54] Employers may end plans with sufficient assets to pay off accrued benefits, provided that decision does not violate a collective bargaining agreement. However, insufficiently funded plans may be ended by employers only if they are in financial distress.

*Economic incentives and competitiveness.*—As the American economy becomes more interdependent with the global economy, it is less clear whether the relatively insulated economic environment, with its known market shares that allowed large defined benefit plans to flourish, any longer prevails. Further, it may be more economically advantageous for the Nation to encourage job mobility, rather than long-term job stability. If so, then it appears that the Nation is moving, and should move, toward a retirement system that is more reliant on defined contribution plans (and, possibly, social security) and less reliant on defined benefit plans. However, a case can be made that defined benefit plans are being too easily sacrificed to short-term economic concerns and changes in governmental policy. These debates will have to be resolved partly on the basis of the effects of retirement policies on the economy. By the same token, national "industrial" policies, or national "competitiveness" strategies may profoundly affect the direction of retirement policy.

### *3. Access to Annuities*

In addition to saving through employer-sponsored pensions and similar plans that usually offer annuities, individuals save on their own and build up income claims in the form of financial and physical assets. As noted in section V, income from assets accounts for 28 percent of total income going to the elderly. However, individuals often face difficulties in converting capital assets into retirement income (or "annuitizing" them). In particular, converting home equity into an explicit income flow has been difficult, although it may be more successful in the future. Some hurdles to overcome are noted below, and are discussed in greater detail in chapter 7 of the background papers.

There is a saying in the insurance industry: "Life insurance is sold, but annuities are bought." This suggests that if the prospective buyer of an annuity has not decided to buy already, it will be hard to sell it to him. One reason this might be true is that the monthly income often looks small in relation to the purchase price. Moreover, it often appears small in relation to the monthly income the prospective buyer thinks he might earn if he invested his capital instead.

The monthly income from an annuity often is relatively small because of the risks the seller must take into account. For example, if the buyer wants some inflation protection, an insurance company can provide a partially indexed or "graded" annuity, but the initial monthly payment will be lower than under a nonindexed annuity. If the buyer wants insurance against premature death and the loss of part of the value of the premium, he can buy a "term-certain" annuity. A certain number of payments would be guaranteed, but the monthly payment would be lower than under a "straight life" annuity.

Although the annuities market is large and growing, individuals still might hesitate to purchase them. They might prefer instead to live off their capital. This seems relatively attractive to some, but the retiree risks outliving his capital. If he consumes his capital eventually, he could spend his later years with a reduced standard of living that could drop him into poverty.

### 4. *The Limits on Risk Prevention*

There is only so much the Government can do to minimize risks in retirement claims. Indeed, too much in the way of Government guarantees can create moral hazards and perverse incentives that, in turn, demand ever greater amounts of Government regulation to correct. This phenomenon can be seen currently in the Government's continuing attempts to wrestle with the potential liabilities of the PBGC and the FSLIC system. Some risks are natural, even vital, for a market economy to function well. A balance, therefore, must be struck between an understandable paternalism that attempts to assure adequate retirement income for all and greater reliance on the market to send correct signals to individuals who are at risk to provide their own retirement income.

Further, even when it comes to retirement claims that the Government itself underwrites, as in social security or private retirement accounts invested in Government bonds, there are no ultimate guarantees. In the final analysis, any worker's retirement expectations are only as good as the Nation's economic well-being and its traditions of obligation and trust, in the absence of competing priorities of drastic urgency.

## VII. Aging, Health, and Medical Care

### A. INTRODUCTION

Uncertainties about the ability of the aged to pay for medical care during retirement years pose particularly difficult problems for Federal policymakers. Federal retirement income policies for future retirees generally focus on assuring sufficient levels of cash income, and if projected future levels materialize, the elderly will be able to afford the cost of their housing, food, clothing, and most other goods and services. Medical care needs, however, are unpredictable and their potentially large out-of-pocket cost may be prohibitive even for many elderly with insurance.[55]

Two characteristics of medical care distinguish it from other issues of retirement income. In the first place, the dollar cost of the obligation is open-ended. In contrast to income from other retirement claims, which varies more predictably with economic growth, no such relationship limits growth in medical care expenditures. The second distinguishing feature exacerbates the problem of this open-ended claim. The ideal of equal access to medical care, regardless of income, exerts a strong hold on citizens in the United

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[55] Chapter 10 of the background papers analyzes these points in greater detail. This overview section draws on that analysis.

States. Whereas substantial inequality in overall income status of the elderly (and other population groups) is expected, accepted, and provided for in cash retirement income programs (the means-tested SSI program, for example), greater equality has thus far been demanded for medical care.

Changes in medical care financing may call into question this egalitarian view. Past methods of financial reimbursements to medical care providers have enabled them to charge self-paying and privately-insured customers more, so that roughly equal medical care could be provided to patients without the means to pay. Recent moves to control medical care costs (by the Federal Government and others) have been criticized because they could lead to the practice of "two-tier medicine," with population groups that rely on publicly financed health insurance (the elderly and the poor) having access only to lower-quality medical care.

Analysis of elderly medical care issues must be seen in the context of the entire medical care system. This perspective highlights a major question for the future: the extent to which medical care costs continue to increase at a rate far exceeding growth in the Nation's GNP. Continuation of this trend will channel an ever-increasing portion of the Nation's ability to produce goods and services to the medical care industry—an outcome that might affect the overall economy by making more difficult the generation of adequate capital for future economic growth. At the same time, continued medical cost increases in excess of GNP growth specifically limit the Nation's ability to support the medical care needs of an aging population because these expenditures flow through the Federal budget.

Only the medical care costs of the elderly and poor, about one-quarter of U.S. medical costs, flows through Federal budget accounts. In contrast, most other industrialized countries have national health insurance plans covering their entire populations. Federal expenditures in this country account for about half of the elderly's medical care expenditures, and about half the cost of coverage for the poor. Other population groups receive medical insurance as part of their overall compensation from employers—if they are employed and their employer offers a medical insurance plan. A sizable minority are able only to buy individual health insurance policies (usually much more expensive) or are uninsured.

Federal expenditures for medicare and medicaid (the cooperative Federal/State program for the covered poor) will total some $100 billion in FY 1987, double the level at the beginning of this decade. These expenditures constitute nearly one-fourth of the Nation's total medical care bill, about one-tenth of Federal budget expenditures, and about 2.1 percent of the GNP.[56]

## B. THE ELDERLY: GROWING NUMBERS AND INTENSE USERS OF MEDICAL CARE

The aging of the population presents particular problems for the medical care system. Since the elderly require more medical care than younger age groups, continued improvements in longevity rates may increase medical care spending. Demographers project an increase in the population 85 years and older from 2.2 million in 1980 to 6.6 million by the year 2010—a tripling over this 30-year period. These very-old age groups require significantly more nursing home care and other treatment because of the much greater incidence of chronic ailments that prevent them from taking care of themselves, and often from being cared for at home. Thus, pressures on the medical care system will result simply from longevity improvements long before the baby boom reaches age 65, and when the baby boom becomes very old (starting in 2030), the pressures will worsen. The Census Bureau projects 16 million in the 85 and older cohort in 2050.

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[56] Section IV of the overview analyzes current rates of increase in medical care expenditures, and discusses projections of future levels of medicare expenditures as a percent of the GNP.

Analysis of the elderly's use of medical care illuminates a complex relationship between increases in the number of elderly and in medical care expenditures. Studies show the elderly's use of medical care far exceeds that of the younger population. Average medical care expenditures in 1984 for those 65 and over were 3½ times as great as for the under age 65 population ($4,200 per year compared to $1,200). However, these averages hide important distinctions. The elderly population (age 65 and over) varies greatly in its use of medical care. Average utilization for those age 65 to 74 is only slightly greater than for younger age groups. Those 75 and over (and particularly those 85 and over) use much more medical care. A review of medical care expenditures during the last year of life helps to clarify the issue. In 1978 average medical care expenditures for medicare enrollees during the last year of life were $4,527—in contrast to $729 for those who did not die.

Uncertainties about the elderly's future health status may pose a potential threat to the Nation's ability to afford high-quality care for them. Demographers agree that future elderly will live longer. However, they disagree over how much longevity rates will increase and why. If increases in lifespan are accompanied by corresponding improvements in the health status of the elderly, more people living to later ages would not by itself result in major resource shifts to the medical care system. (The amount spent during the last year of life, whether death occurs at age 65 or age 80, largely determines expenditure levels.) On the other hand, if increases in lifespan occur because intensive use of medical care technology extends the period preceding death when the elderly suffer from chronic (and expensive) illnesses, the open-ended nature of medical care obligations will lead to substantial growth in expenditures for an aging population. (See chapter 10 of the background papers for a fuller explanation of this point.) Health economist Robert G. Evans has stated the point as follows:

> * * * it is not the increasing numbers per se of the elderly which are creating strains on the health care system, and by extension increasing claims by that system on the resources of the rest of society. Rather it is the way in which the health care system reacts to the elderly, the expanding service mix on the intensive and extensive margins, which is creating economic strains as well as serious questions about the effectiveness and the appropriateness of that response.[57]

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[57] Evans, Robert G. Illusions of Necessity: Evading Responsibility for Choice in Health Care. Journal of Health Politics, Policy and Law, v. 10, no. 3, fall 1985. p. 446–7.

## C. PRESSURES FOR PROGRAM REFORM

Acknowledged problems with this country's medical care financing and delivery systems and proposed solutions crowd the legislative agenda. These pressures for substantial change (usually called reform) exist in the medical care system, independent of the aging baby boom, because many of today's elderly and poor have inadequate access to it, and because of financial problems in medicare's two large trust funds. As the Congress grapples with these complex and difficult short-run issues, the specter of longer-run population aging and actuarial projections of attendant program costs serve to limit legislative solutions. In other words, pressures for program reform are driven by short-run system inadequacies, but potential solutions may be limited by longer-run concerns. Short-term legislative action will be directed at: (1) gaps in health insurance coverage, (2) medicare's financing problems, and (3) continued increases in health care costs.

### *1. Gaps in Coverage*

Claims for most retirement income are built up over a working career to be drawn upon in old age. In contrast, access to the medical care system is more often thought of as a right. Exercise of this right requires insurance, and discussions of gaps in medical care coverage usually refer to lack of or inadequate health insurance. Other industrial countries generally provide publicly financed health care for their entire population, but in the United States health insurance for most working people and their dependents is provided as a tax-subsidized component of compensation. Of the total $458 billion spent for medical care in the United States in 1986, roughly one-fourth flowed through Federal or State government budgets that paid the medical care bills for the elderly, the disabled, and the eligible poor under the medicare and medicaid programs. The remainder of the Nation's medical care bill was paid by private (mostly employer-sponsored) insurance or by unreimbursed out-of-pocket expenditures. Coverage gaps include issues that affect both the elderly and the nonelderly populations.

When medicare was enacted in 1965, its benefit structure was patterned after common acute care private insurance plans of the time—principally Blue Cross and Blue Shield plans. Medicare's benefits have changed little since then. In the meantime, private health insurance plans have changed. In contrast to medicare, many private plans now provide some dental and out-patient drug coverage. Furthermore, medicare's reimbursement methodologies (including enrollee-required deductibles, co-payments, and premiums) may not provide appropriate utilization incentives. And finally, medicare does not set an upper limit on enrollees' obligation for medical care expenses. A small proportion of enrollees face very large out-of-pocket expenditures that are not covered by medicare. Medicare does not protect these unfortunate few against financially devastating medical care expenditures. The congressional agenda currently includes legislation that would place a ceiling on enrollees' out-of-pocket expenditures in connection with covered Medicare services.

The Congress also is concerned about a much larger and costlier gap in program coverage for the elderly. Surveys show that most respondents think medicare pays for what is generally termed "long-term care"—that is, medical and custodial care provided those with chronic conditions such as paralysis from strokes or severe arthritis. However, medicare's current benefit structure does not provide long-term care services, the demand for which will almost certainly increase steeply in the decades ahead as the number of very old grows. While less than 2 percent of all people between the ages of 65 and 74 reside in nursing homes, 7 percent of all 75- to 84-year-olds and more than 20 percent of all those age 85 or older live in such institutions. Thus, the expected doubling in the number of 75- to 84-year-olds between now and the year 2050, and the projected six-fold increase in the number of people over 85, portend a potentially enormous increase in the demand for long-term care.[58]

The coverage offered by the few long-term care insurance policies available from private companies is also limited. Private insurance policies for long-term care, while growing in number, are not widely available nor affordable by large numbers of the elderly. Of the existing long-term care policies, most provide indemnity benefits, generally for nursing home care, that pay a fixed amount for each day of covered service. Home care benefits, especially those related to custodial care, are less common. Plans that provide any coverage for home care may require a prior stay in a skilled nursing facility. This limits benefit payments for home care and helps to keep the premiums for these policies affordable. However, this benefit structure does not assist persons who have not been institutionalized and for whom home care services might delay the need for admission to a nursing home.

Proposals to resolve this problem raise serious budgetary and financing problems. At present, some $25 billion is paid for long-term care—about one-half by the Medicaid program (for the elderly poor including those who have become poor by spending their assets to qualify for nursing home care under medicaid) and half from out-of-pocket sources. In addition, an indeterminable demand for such care is now provided in home settings by relatives. Concern about potential expansions in demand has deterred attempts to add an open-ended long-term care benefit to medicare, but narrower approaches are being examined.

### *2. Medicare's Financing Problems*

Medicare's financial crisis has been on the public policy agenda for the past decade. This report emphasizes the cost of programs rather than their financing mechanisms, but threatened trust fund insolvency creates pressures for congressional action and accordingly medicare financing is discussed below.

Five years ago Medicare's Board of Trustees projected insolvency in the Hospital Insurance (HI) program by 1988. Subsequent annual reevaluations by the Board of Trustees have pushed the year of trust fund exhaustion further into the future—to 2002 in its 1987 report.

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[58] Penner, R.G., Director, Congressional Budget Office. Statement before the Subcommittee on Economic Resources and Competitiveness, Joint Economic Committee, July 31, 1986.

The trustees, however, also estimate that program expenditures will exceed current payroll tax revenues starting in 1995, with the gap widening for medicare's entire 25-year and 75-year estimating periods. The reprieve from 1988 to 2002 for fund exhaustion occurred in part because the Administration and the Congress have held expenditures under the new Prospective Payment System below initial estimates.

Medicare also pays for physician services, both in and out of hospitals, through the Supplementary Medical Insurance (SMI) program, sometimes called Part B of medicare. Financing for this program does not come from the payroll tax which is used for hospital insurance. Rather, costs are shared between enrollee premiums and general fund revenues. In 1965, when the program was enacted, legislators required enrollees to pay about one-half of program costs, with the other one-half coming from general revenues. However, the years since the passage of medicare have seen inflation in medical care costs that far outstrip price increases in the overall economy. This caused SMI premiums to rise much faster than social security cash benefits because these were linked to general price inflation. To solve this problem, the Congress in 1972 limited the extent to which SMI premiums could increase. Over time the enrollees' share shrank to under 25 percent, with general revenues picking up over 75 percent. (Current law has established the enrollee premium and general revenue shares at 25 and 75 percent, respectively.)

General funds sufficient to make benefit payments under SMI are automatically appropriated and thus under current law SMI's trust fund would never become depleted. Nonetheless, analysts identify a financial imbalance in SMI because as long as medical care costs increase faster than general fund revenues, SMI will require an increasingly larger share of the Federal budget and overall national resources.

### *3. Growth in Medical Care Costs*

Problems of financing medicare's HI and SMI programs are inextricably bound up with the larger problem of continuing increases in medical care costs above rates of inflation in the overall economy. During the past 25 years, the share of the Nation's total production of goods and services accounted for by the medical care sector have more than doubled—from 5.3 percent in 1960 to 10.9 percent in 1986, a level substantially exceeding that of other industrialized countries.[59] This share has risen rapidly because growth in medical care costs has greatly exceeded growth in the economy.

Medical care expenditures as a percent of GNP leveled off at between 10.5 and 10.7 percent during 1983–85, leading to some optimism that Federal and private sector cost control measures had been successful in containing continual increases. However, expenditures rose again in 1986 to 10.9 percent of GNP. If percentage increases that prevailed from 1974 to 1984 are projected into the future, this figure will exceed 15 percent in the year 2000.

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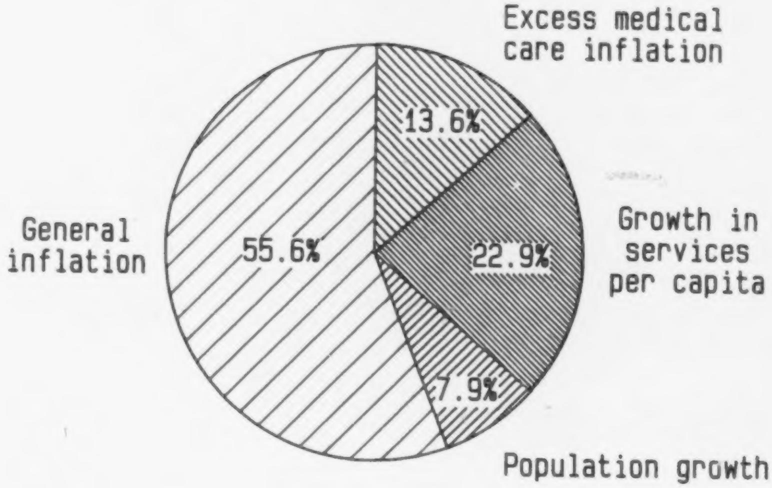
[59] Health Care Financing Administration. Office of the Actuary. Division of National Cost Estimates. June 1987.

Medical care expenditures rose for different reasons during the decade. Figure 5 indicates the relative contributions to growth in health care expenditures of four components between 1974 and 1984. (Future estimates are not available, but the relationship among these components provides clues about future directions.)

Figure 5.

Components of Growth in
National Health Expenditures:
1974-1984



Source: Health Care Financing Administration

Between 1974 and 1984, 55.6 percent of the rise in medical care costs was caused simply by general inflation in all goods and services. An additional 13.6 percent occurred because prices in the medical care sector rose faster than general inflation. A relatively small cause of expenditure increases in medical care (but one that will grow over time as the population ages) was population growth—accounting for 7.9 percent. The above three components may not respond readily to efforts of either the medical profession or Federal Government health policymakers, although medical care price increases at rates higher than general inflation will receive careful scrutiny.

The fourth component of expenditure growth, however, accounting for 22.9 percent of the growth, measures the intensity of services provided and likely will receive direct attention by policymakers. This component reflects the open-ended nature of the medical care obligation/entitlement. Specific illnesses can be treated in a variety of ways, some requiring costly surgery or advanced technological techniques and others not. For example, diagnostic imaging using X-rays is much less costly than Magnetic Resonance Imaging. Ethical, as well as medical, questions are raised about the extent to which and under what conditions doctors should resort to very expensive treatment. As technological innovations in medical care continue, the issue becomes more acute. Changes in the intensity of medical treatment, particularly using advanced technology, will largely determine the future growth of medical care as a proportion of GNP. Changes in technological advances are impossible to project, but as they occur health policymakers can weigh the effectiveness in treatment outcomes against their effect on medical care costs.

No natural barrier limits medical care's share of GNP. Choices made through market and governmental processes will set the level. As with other aspects of retirement income, substantial increases in the rate of future economic growth would make the choices easier. Conversely, in a slowly growing economy the competition among economic sectors for limited resources would become more intense.

Medical care resource decisions are unique in certain respects. Most developed nations are more egalitarian in their allotment of resources for medical care than they are for other goods and services. In the United States, as well as other countries, the idea of different levels of medical care based on income seems offensive. Furthermore, most people desire the best medical care possible when it is needed—and want the decision regarding the appropriate treatment to be made without having to take financial considerations into account. These views constitute a formula for continued growth in medical care costs, but deliberate (though difficult) policy decisions by private and governmental medical care policymakers are possible. If cost containment efforts are unsuccessful, economic pressure could lead to a financial rationing of care in a medical care system in which individual doctors have relatively less control over appropriate treatment.

## D. APPROACHES TO REFORM

Concerns over program and policy reforms in medical care will rank high on the legislative agenda in the 100th and subsequent Congresses. These reforms will be directed at (1) providing greater access to medical care by closing gaps in current insurance coverage (for both the elderly and the younger populations), and (2) controlling the rate of increase of medical care expenditures (particularly for publicly financed care) while maintaining the quality of care. In a sense, of course, these two objectives are incompatible. By definition, providing greater access implies increasing costs, and means of controlling expenditures always carry the danger of denying appropriate medical care to those who need it.

Over the past decade, policymakers and analysts have debated competitive as opposed to regulatory means of reforming medical care. This debate, which will continue, reveals basic disagreements about the nature of medical care and the role of government in our society. A competitive market would allocate the share of national resources to be devoted to medical care by letting individuals buy what they can afford from the private services provided. However, some could afford very little care and the necessary conditions for efficient competitive markets arguably are less present in the delivery of medical care (for example, patients have little ability to evaluate their care, and health insurance risks are very large for private employers). Governmental regulatory action may be required to limit increases in public expenditures.

Competitive market solutions rely on two principles: (1) providing incentives for efficiency by consumers at the time of the decision to purchase health insurance or to pay deductibles and co-payments at the time of treatment since the necessity for health insurance is not questioned, and (2) putting medical care providers at risk for treatments and outcomes of medical treatment—for example, through promoting the use of various types of medical care organizational arrangements (Health Maintenance Organizations and others) in which the organization is at risk.

During the past decade, private businesses have become much more conscious of the cost of their employer-sponsored health insurance obligations and have moved aggressively to promote competitive market solutions. The Reagan Administration has advocated such policies for the Medicare program and has encouraged States to do likewise with medicaid. Greater cost sharing by medicare enrollees has been proposed in annual budget submissions from the Administration, but Congress rejected these as punitive toward the elderly and poor.

Although the Administration continues efforts to instill competitive market principles in the Medicare program through support for voucher proposals and through proposed expansion of medicare's use of alternative delivery systems, these efforts have not received a sympathetic hearing by Congress. For example, in its submission to Congress for FY 1988, the Administration's budget includes proposals for:

> * * * urgently needed medicare reforms that will restrain the rapid growth in Federal health spending and, in turn, will help improve the Nation's competitive position. The principle of capitation—paying a fixed, predetermined price for health

services—would be expanded in medicare and medicaid, replacing the inflationary incentives inherent in cost reimbursement. By creating incentives for the efficient delivery of quality care, capitation and other reforms can bring to Federal programs the same efficiencies realized by employers and private insurers.

In 1983, Congress enacted major changes in the way medicare pays hospitals under the HI program. Program changes required payment of a fee fixed in advance (varying according to 471 "diagnosis related groupings") for treating medicare patients, rather than paying after-the-fact for whatever allowable costs the hospitals incurred. This and similar proposals for changing how medicare pays physicians provide incentives to hospitals and to physicians to offer less costly treatments.

Efforts for controlling rates of growth of medical care costs will undoubtedly continue in future years—both from government and private sector sources. At the same time, concerns will continue to mount regarding the need to provide sufficient access to medical care for all. To the extent such efforts are successful, one result will be to add pressures on medical care costs. Legislation introduced to the 100th Congress would (1) put a ceiling on the amount medicare enrollees would have to pay for inpatient hospital care, (2) mandate employer-sponsored health insurance for all employees (some 25 to 35 million individuals either are unemployed or work for employers who do not provide health insurance), and (3) establish long-term (nursing home) medical care under medicare. These proposals all are controversial and the debate over how to provide greater access to medical care for these uncovered services and populations undoubtedly will continue into future Congresses.

The potential financial imbalance in the HI program's trust fund lurks in the background of debates about medical care policy. Five years ago, when trust fund depletion seemed imminent, a Social Security Advisory Council (whose Chairman, Otis Bowen, now is Secretary of the Department of Health and Human Services) proposed a series of benefit reductions and trust fund revenue increases to restore the program to actuarial balance over the next 25 years. The HI financial outlook has improved since that time and many of the Advisory Council's proposals were not enacted. But, even though the short-run financial picture is brighter, the program's actuaries still project an actuarial imbalance over the next 25 years. Indeed, the HI trust fund would go to zero in 2002 (based on the Board of Trustees' intermediate assumptions) according to the latest estimates. However, starting in 1995 benefits paid out of the HI trust fund will begin to exceed payroll tax revenues into it. When this happens, the net effect of the HI program will be to add to the budget deficit, and may spur renewed cost containment proposals.

Trust fund depletion would occur earlier if economic conditions should be less optimistic than the actuaries' intermediate assumptions. Furthermore, the 25-year estimation period stops short of the year in which the oldest cohort of the bably boom reaches 65. One way or another, this basic financial imbalance will have to be resolved if medical care costs continue to outpace growth in the overall economy. Private organizations and individuals have proposed major changes in the medicare program, including combining the HI and the SMI trust funds and revamping the benefit structure of medicare to include provision of long-term care. Such proposals have not yet reached the serious legislative stage.

With continuing pressures on the overall economy and on government budgets, and with a perceived need for additional medical care coverage, various possible ways to finance greater medical care access are being considered. Briefly, two possible ways of viewing the financing questions are noted because they seem directly relevant to concerns about an aging population and the baby boom's retirement. First, radical change could base eligibility for medicare on health status rather than on age. Most people aged 65 to 75 remain in good health, as opposed to those a few years older. Secondly, care for the elderly poor could be financed by requiring greater payments by the more affluent elderly for their medicare protection.[60] Over the longer run, either approach implies that all or some of the elderly will have to devote an increasing share of their cash income from social security, pensions, or other retirement savings to pay for medical insurance premiums. Of course, this would not be a completely new development. Currently, some 70 percent of the elderly find it desirable to supplement their medicare coverage with private medigap policies, the premiums for which most elderly pay from their after-tax cash income. Some medigap coverage, however, is provided as nontaxable employer-paid health insurance for former employees (generally called "retiree health benefits").

Policies that further shifted medical premiums on to those elderly who are comparatively young or wealthy would have several consequences. For many, less cash income might be available for nonmedical expenditures. Arguably, such a shift might also increase the demand for post-retirement health insurance benefits, which in turn could lead to lower pension benefits (or possibly lower current cash compensation). In contrast to cash benefits, retiree health benefits are completely nontaxable, and accordingly, tax revenues would be lower.

If the elderly, on the other hand, are not required, by these or other means, to explicitly pay for more of their medical insurance from their own income, then the budgetary costs of medicare will be greater. So as to keep overall Federal spending on the elderly within certain bounds, those larger medicare costs could cause future Congresses to feel it necessary to curtail growth in social security benefits. Such a curtailment in social security also would decrease the cash income that the elderly would have available for nonmedical expenses; however, the distributional effects could be different.

As long as any explicit cost shifting to the elderly basically takes the form of higher premiums for medicare or medicare substitutes, the elderly's overall use of medical care is unlikely to change. As discussed earlier, the trade-off between risk-sharing and utilization incentives exists in either Government or privately financed health insurance. Even now, medicare and medigap insurance reinforce one another. Medicare helped create the conditions for the medigap insurance market to exist; paradoxically, the prevalence of medigap coverage likely increased overall utilization and, therefore, medicare costs. As long as the Government is involved to any significant degree in the financing of the elderly's medical costs, the long-term pressures for increased Government involvement in the pricing and use of health care by the elderly are unlikely to diminish.

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[60] For example, the proposed new benefit to protect against catastrophic out-of-pocket expenditures would be financed by the covered elderly population. The higher-income elderly would pay more for their medicare protection, thus introducing an element of income testing into the program.

# PART II

# RETIREMENT INCOME FOR AN AGING POPULATION: BACKGROUND PAPERS

# CHAPTER 1. INTRODUCTION

These background papers were prepared in response to a request from the Committee on Ways and Means. After receiving the Committee's request, a team of analysts from the Congressional Research Service (CRS) and the Congressional Budget Office (CBO) was assembled to formulate a plan for responding to the issues raised by the Committee. The Team met periodically during the summer and fall in 1986, during which time agreements were reached on an overall approach for the project and assignments were made for drafting background papers.

Drafts of the papers were finished by the spring of 1987. These were then used in the preparation of the Overview of the project (part 1 above). This Overview, requested specifically by the Committee, attempts to synthesize the important elements of an analytic framework for the issues of retirement income for an aging population and for the baby boom. The Background Papers formed the foundation for this synthesis, supplemented by Team discussions and other sources of information.

The Background Papers were written by analysts from CRS and CBO. Each paper is designed to deal with a specific issue, but with a common context for approaching the analysis of that issue. Some duplication exists in the introductions to the separate background papers but no attempt was made to eliminate this redundancy. In fact, the papers serve also as stand-alone analyses, in addition to being part of the broader study.

While each paper stands alone, their subjects and organization support a coherent analytic framework for judging retirement income programs and policies. This framework guided the preparation and the structure of the overview and, indeed, is made more explicit there (to allow each paper to stand alone, some subjects are addressed in more than one paper). The analytic framework of the background papers includes:

—*A demographic context.* Chapter 2 presents demographic projections that define the size of the aging population and scope of the retirement of the baby boom generation. Projections of demographic data show that the average age of the U.S. population will increase by 24 percent and the number classified as elderly will grow by around 53 percent during the next 30 years. Also discussed are the characteristics of the current and future generations of elderly. Chapter 3 analyzes various measures of "dependency" most often used to highlight the effects of these important demographic shifts. It concludes that standard measures of dependency raise methodological and definitional issues, and can be misleading.

—*An economic context.* Chapter 4 describes ways an economy can prepare for a fairly rapid increase in the numbers of retired persons compared to those working. It emphasizes the possibility of increasing saving and investment by drawing a parallel between retirement planning by individuals and the Nation. The chapter discusses the timing for a build up of wealth and notes that such a build up for the baby boom's retirement probably would imply a reduction in the Federal deficit and positive trade balances over the next 25 years. Also implied are a build up of public infrastructure and improved skills of workers. Prospects for greater saving and productivity growth are reviewed in the chapter.

—*Economic status of the elderly.* Chapters 5 and 6 assess measures of the economic status of today's elderly and the performance of Federal retirement income programs in their behalf. In general, today's elderly enjoy greater financial security than ever before in history because during their working years strong economic growth prevailed, providing consistent increases in living standards while working and building up the values of claims against the overall economy for retirement income. Liberalizations of social security benefits also augmented their retirement income claims. In response to this exceptional building of retirement claims, men started leaving the work force at ever earlier ages—a trend that has recently slowed down but has not reversed itself. Thus, among the elderly, the proportion of income received from financial assets has grown substantially, while the share from earnings has declined. Chapter 6 discusses the hypothesis that if moderate levels of economic growth do not prevail between now and the baby boom's retirement, their claims against all types of retirement income will be smaller. The most sensitive factor could be the size of their financial assets, and if the total is sufficiently low, the members of the baby boom could reverse the recent pattern by delaying retirement and working longer.

—*Building up claims.* Chapters 7, 8, and 9 analyze the current policies and programs designed to enable workers to build up claims for retirement income to be exercised upon retirement. Social security forms the largest source of retirement income and establishes a foundation upon which other sources can build. Tax-favored claims in private pensions provide substantial retirement income for those who have a long work history with a company that has a plan. However, switching jobs, even among companies with pensions, reduces the value of pension claims, whether vested or not. Projections show that even without an increase in pension coverage above the 50-percent mark, future generations of retirees are more likely to receive pension benefits than today's retirees. Moreover, these benefits are expected to be worth more in real dollars. Chapter 7 analyzes recent attempts to increase overall savings by providing tax incentives for private retirement savings. The conditions under which this might be expected to be successful are quite limited. This chapter also reviews recent attempts to permit the elderly to convert equity built up in houses into retirement income. Most such efforts have had limited success to date.

—*Aging and health.* Chapter 10 explores the impact of a greatly increased aging population on expenditures for medical care in the United States. The elderly use medical care at significantly higher rates than the nonelderly, and thus, population-aging could lead to increased medical care expenditures as a proportion of the Gross National Product (GNP). Furthermore, in contrast to retirement income programs, current issues in medical care will keep these programs on the national legislative agenda for the foreseeable future, even in advance of the full effects of the aging of the population. Two issues likely will dominate concerns about the effects of the aging population on the medical care system. They are (1) whether or how much to limit publicly provided medical care for acute illness, and (2) how to provide long-term care services.

# CHAPTER 2. DEMOGRAPHICS AND THE AGING POPULATION*

As a group, the elderly—all persons 65 and over—are growing very rapidly. In the 1980s, the group of persons aged 85 and over, the "oldest old," is growing faster than any other age group in the population. But are current growth patterns unusual? How do they compare to the growth that we have experienced in the past and that we can expect in the future? This chapter provides a demographic context for the remainder of the report.

First, we will examine the nature of the growth of the elderly population and the demographic context within which that growth has occurred. We will briefly review other consequences of slowing population growth, which has been the main contributor to the aging of the population. We examine the sensitivity of population projections, to demonstrate how much confidence we might have in the precision of projections that are now being used for policy deliberations. Then, on the basis of limited assumptions, we make some speculations about some of the social characteristics of the future aged in comparison to those of the current aged. In the last section of this chapter we examine the changes that have occurred in labor force participation during the life of the baby boom, and the effects these changes may have on the future labor force.

Population projections form the basis of much of the discussion of this chapter. It is clear to anyone who has used projections that they do not consistently and accurately predict the future. When "the future" becomes the present, past projections may prove to have been wide of the mark, and sometimes substantially so. But it is important to understand that, however tenuous they may be, projections provide an important foundation to informed policy debates. As this chapter will show, there is considerable variability in projections, depending on the implicit assumptions. Nevertheless, they all point in the same direction: toward the aging of the U.S. population. This information, by itself, has provided important impetus to policy makers concerned about planning now for that future.

As time passes, and new information becomes available, new projections will be made. Policy decisions will likely be adjusted to reflect new understandings of the aging of the baby boom. Both the development of projections and of public policy are iterative processes. Adjustments are made as more is learned about the population. They are also made when public policy changes with respect to health, immigration, the family, and so on. In addition, as projections change, the public policy debate reflects new information.

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* This chapter was prepared by Jeanne E. Griffith, Congressional Research Service.

It is appropriate and, indeed, essential that projections are scrutinized and used in policy formulation. Granted, they are not reliable and cannot provide assurances of the future. There is no guarantee that policy will not have to be altered on the basis of revisions to projections, but, however, unreliable official projections may be, they do provide clues about the future to enhance policymaking.

### A. Summary

The major points of this chapter can be summarized as follows:

*Population Growth*

—The size of the elderly population has been increasing rapidly throughout this century. Over the next 60 years, the growth will continue at a very rapid pace, more than doubling between 1980 and 2020, adding about 25 million elderly to the population in that period. In 1980, there were 25.5 million elderly in the country; by 2020 that figure may increase to over 51 million and by 2050 to more than 67 million.

—The size of the oldest old population (persons 85 and over) will grow even faster but not as soon; the size of this group will increase rapidly after 2030, and between 1980 and 2050, this population would increase eight-fold.

—The rates of growth of the elderly will decline in the future, but that is partly because the size of that group has become so large that it is harder to sustain such rapid rates of growth.

—The share of the total population that is elderly will increase by more than 50 percent by 2020, so that by then nearly one in five persons will be elderly. Of those, nearly one in eight will be aged 85 and over.

*Factors Leading to the Aging Population*

—Declining birth rates through this century, except during the baby boom, have contributed greatly—and will continue to do so—to the aging population.

—Large waves of immigration in the beginning of this century contributed to the size of the current elderly population. In the near-term future, however, immigration of younger age groups will reduce the share of the population that is elderly.

—Recent declines in mortality rates have been concentrated among the elderly; as a result, these too have contributed to the aging of the population. In particular, they have played a factor in the rapid increases in the size of the oldest old population.

*Other Consequences of Slowing Population Growth*

—A number of other aspects of the population change along with the size of the aged population as population growth slows, These include the aging of the working age population, the race and ethnic composition of the population, the relative contribution of immigration to population growth, and the importance of internal migration to local growth trends.

*Sensitivity of Population Projections*

—Population projections of the elderly population have tended to underestimate substantially actual growth in the past.

—The range of prjections under varying assumptions of the future size of the elderly population is great. For 2050, the highest projection is nearly 50 percent larger than the lowest. For the oldest old, the range is even greater; the highest is more than two times higher than the lowest.

—The differences in assumptions have great effects on the share of the total population that would be elderly. In 2020 that share would be 20 percent higher under the highest projection series than under the lowest. The effect on the share of the population that would be 85 and over is greater by 2050; at that time, the highest series would imply a share more than twice as large as the lowest.

—Of the three demographic factors of growth, the mortality assumptions have the greatest effect on the projections of the size of the elderly population. Immigration assumptions are next most important, and fertility assumptions are not important in the projection period observed, although they do make a difference in the projected share of the population that is elderly.

*Social Characteristics of the Current and Future Elderly*

—The baby boom has already attained much higher levels of education than the current elderly; as a result, when the baby boom reaches retirement years, the elderly will be a more highly educated group.

—The current elderly have a very high share of immigrants as a result of large waves of immigration early in this century. The baby boom has grown up in times with relatively lower levels of immigration, and, as a consequence, there will be a much smaller share of elderly who are immigrants when it ages.

—Both more educated and older voters show higher levels of voter participation than other groups in the population. As the baby boom ages, since it is a large, well educated group, it may form a proportionately larger share of the electorate than might be expected on the basis of its numbers alone.

—Because the baby boom itself appears to be having very small families, when it retires individual members may have fewer family members of the next generation to draw on for assistance or support.

—The time that a person spends in retirement increases as life expectancies for persons aged 65 increase. Under projections of future life expectancies and different calculation techniques, a person in 2020 could retire somewhere between age 71 years, 7 months to age 74 years, 9 months and expect to spend the same amount of time in retirement as a person who retired at age 65 in 1940.

*Labor Force Participation Trends*

—Labor force participation rates for women at all ages have increased rapidly in recent years. Increases have been highest among baby boom women, those now in the age group 25 to 44.

—Men age 55 and over have experienced decreasing rates of labor force participation in recent years. Women 65 and over have had decreasing rates also, but participation among women 55 to 64 has increased substantially.

—Women with higher levels of education tend to participate to a greater extent in the labor force, and the higher educational levels among the women of the baby boom tend to support expectations of future high levels of participation among women. Future levels of participation among women could play an important role in determining the size of the labor force in the retirement years of the baby boom.

—Increases in labor force participation have been greater among white women than among black women; black women, however, still have higher levels of labor force participation than whites in all age groups except 65 and over.

—Projections of the labor force indicate that in the 1990s the size of the young labor force (ages 25-34) will decline but that the portion aged 25 to 54 will increase by more than one-fourth. Altogether, the labor force in 1995 would be 14 percent larger than now, at 129 million persons.

—Demographic assumptions about population size and male and female labor force participation have a large effect on the projected labor force. Differences among detailed economic assumptions may have substantially less effect on the size of the projected labor force.

## I. Population Growth and the Aged Population

### A. WHAT ARE THE HISTORICAL TRENDS AND PROJECTIONS OF THE AGED POPULATION?

From the beginning of this century until 1980, the elderly population has grown at a rate nearly twice as fast as the total population (2.6 versus 1.4 percent per year, respectively). In 1900, one in 25 persons in the population was elderly, but this figure increased steadily so that by 1980, more than one out of every nine persons was elderly. This consistent, relatively rapid growth has placed pressures on social, economic, and medical institutions that serve the needs of the elderly.

There are a number of ways of examining the growth of the elderly population; each provides a slightly different perspective on the potential effects of that growth. Three basic approaches examined below are the size of the elderly population, its rate of growth, and the share the elderly form of the total population. These approaches are examined for both the total elderly population and the oldest old, persons aged 85 and over.

### *1. Size of the Elderly Population*

The growth of the elderly population has been steady over the entire century, as table 2.1 shows. Between 1900 and 1980, the population 65 and over increased more than eight-fold.

A frequently used set of projections of the size and age distribution of the population is produced by the Bureau of the Census.[1] The Bureau produces a number of different "series," with varying assumptions about fertility, mortality, and net immigration to the United States, and they identify a most probable range from a low to a high series. The agency selects as the most likely series the one that incorporates middle levels of projected fertility, mortality, and immigration. The range of the projections and the sensitivity of the projections to varying assumptions will be discussed in a later section of this chapter; in this section the middle series will be used as a current "best" estimate for the purposes of discussion.[2]

These projections show, in table 2.1, that the elderly population is expected to grow rapidly through the middle of the next century. From now through 2010, however, the growth will be slower than later, as the size of the aged population increases by less than one-fourth. However, as the baby boom [3] reaches these ages after 2010, the size of the aged population will increase by two-thirds in less than 20 years. The size of the aged population will not decrease, even after the baby boom; these projections show continued increase in the population at least through 2060.

A comparison of projected growth to past growth of the elderly population provides some additional perspective. In the 50 years between 1980 and 2030, by adding 39.0 million, the elderly population is projected to increase by a factor of 2.5. In the 50 years between 1930 and 1980 it increased by a much larger factor of 3.9; in this earlier period, however, only 18.9 million elderly were added to the total population. The anticipated growth of the elderly population, while rapid, is not unprecedented.

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[1] U.S. Department of Commerce. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25, No. 952. May 1984.

[2] The projections produced by the Social Security Administration (SSA) are also frequently used in discussions of the aging of the population. The various assumptions used in these projections are similar to those of the Bureau of the Census. Except for the highest series, the SSA projections are somewhat higher than the Census projections because they include additional components of the population for Social Security's purposes that are not included in the Census projections (including an adjustment for the census undercount, the civilian residents of Puerto Rico and other U.S. commonwealths and territories, and other small groups of citizens not resident in the U.S.). The range of the total population projected for 2060 under the SSA projections is from 250 to 413 million while for the Bureau of the Census projections, it is from 218 to 459 million. The middle series (Series II) of the SSA projects a total population of 331 million in 2050 in comparison to the Census middle series projection of 310 million. Because of the similarity of the projections and the assumptions used in creating the projections, the Census population projections will be used in this chapter because they provide some greater detail for analyzing the effects of certain of the underlying assumptions.

[3] The group of persons born from the late 1940s through the mid-1960s.

### TABLE 2.1.—POPULATION AGED 65 AND OVER: ACTUAL POPULATION, 1900–80; PROJECTED POPULATION, 1990–2060

[Bureau of the Census projections]

| Year | In thousands |
|---|---|
| Actual: | |
| 1900 | 3,084 |
| 1910 | 3,949 |
| 1920 | 4,933 |
| 1930 | 6,634 |
| 1940 | 9,018 |
| 1950 | 12,270 |
| 1960 | 16,559 |
| 1970 | 19,980 |
| 1980 | 25,545 |
| Projected (middle series): | |
| 1990 | 31,697 |
| 2000 | 34,921 |
| 2010 | 39,195 |
| 2020 | 51,422 |
| 2030 | 64,581 |
| 2040 | 66,988 |
| 2050 | 67,411 |
| 2060 | 70,081 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, D.C., May 1984. Table 6.

Within the elderly population, the oldest old are growing more rapidly than any other age group in the population. Table 2.2 shows the rapid increases in this age group that have occurred so far in this century and that are projected into the future. Since 1900, the population 85 and over has increased more than eighteenfold. Even through 2010, while the total aged population is increasing more modestly, the oldest old population will increase to nearly three times its 1980 level. The largest increases in this population will occur as the baby boom enters this age group, after 2030. In the 20 years between 2030 and 2050, the size of this age group will nearly double.

TABLE 2.2.—POPULATION AGED 85 AND OVER: ACTUAL POPULATION 1900–80; PROJECTED POPULATION, 1990–2060

[Bureau of the Census Projections]

| Year | In thousands |
|---|---|
| Actual: | |
| 1900 | 123 |
| 1910 | 167 |
| 1920 | 210 |
| 1930 | 272 |
| 1940 | 365 |
| 1950 | 577 |
| 1960 | 929 |
| 1970 | 1,409 |
| 1980 | 2,240 |
| Projected (middle series): | |
| 1990 | 3,313 |
| 2000 | 4,926 |
| 2010 | 6,551 |
| 2020 | 7,081 |
| 2030 | 8,612 |
| 2040 | 12,834 |
| 2050 | 16,034 |
| 2060 | 15,387 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, D.C. May 1984. Table 6.

This group is of particular interest for many reasons. Its proportion of the entire elderly population is one indicator of the increasing longevity of the elderly population; people now age 65 can expect to live significantly more years than persons age 65 at the turn of the century could have. This age group has a higher incidence of health problems and consequently requires special attention from medical institutions. These people also have different needs in terms of other aspects of their lives, for they are more likely to be frail and have special housing needs; they are more likely to be widowed and have no spousal support. In addition they may have children who are elderly themselves and may be less able to serve as sources of support. On the other hand, these older children may be able to provide some of the types of support that the oldest old will need, such as companionship and limited home health support.

### 2. *Rates of Growth of the Elderly Population*

The rate of growth of the elderly population, in contrast to that of the total population, demonstrates how rapidly the existing elderly population is expected to increase. Figure 2.1 shows the rates of growth of the elderly population in contrast to the total population. In this chart, where the steepness of the lines indicates the rates of growth of the populations,[4] the much more rapid growth of

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[4] This is known as a semilogarithmic, or ratio, chart. The conversion of the scale of the population size (on the vertical axis) to a logarithm of the population means that the steepness of the

Continued

the elderly population is very clear. In the course of this century, the rate of growth of the elderly population has varied, but it has been consistently higher than the rate of growth of the population as a whole.

The elderly population is projected to grow rapidly through the middle of the next century. The population 65 and over is projected to increase at a modest annual rate of 1.4 percent between 1980 and 2010, but after that the baby boom will reach these ages. Between 2010 and 2030 the size of this group is projected to increase by 2.5 percent per year, to 64.6 million in 2030. The change in the rate of growth shows in the line for the "65+" population in figure 2.1; the projected growth rate slows somewhat over the next 30 years, but then increases substantially from 2010 through 2030. In that 20-year period, however, the projected growth rate of the elderly population would be just slightly below the average rate of 2.6 percent per year experienced in the first eighty years of this century.

The United States has previously experienced the anticipated growth rates, but we have not added similar numbers of elderly to our population at a time when the remainder of the population was growing as slowly as is projected over the next half century. Fully half of the additional growth of the population in the next 50 years is expected to be in the 65 and over age group. In contrast, over the last 50 years, when the elderly population was also growing at a relatively rapid rate, the total population was growing faster than it will in the future; in this time, less than one-fifth of the population added was elderly.

Figure 2.1 also shows the extraordinary growth of the oldest old population. Over the course of the century, the oldest old have grown at a rate of 3.6 percent per year, much faster than the elderly as a whole. This rapid growth is the result of relatively higher fertility rates in the turn of the century when this group was born and of generally improved mortality conditions over their lives.

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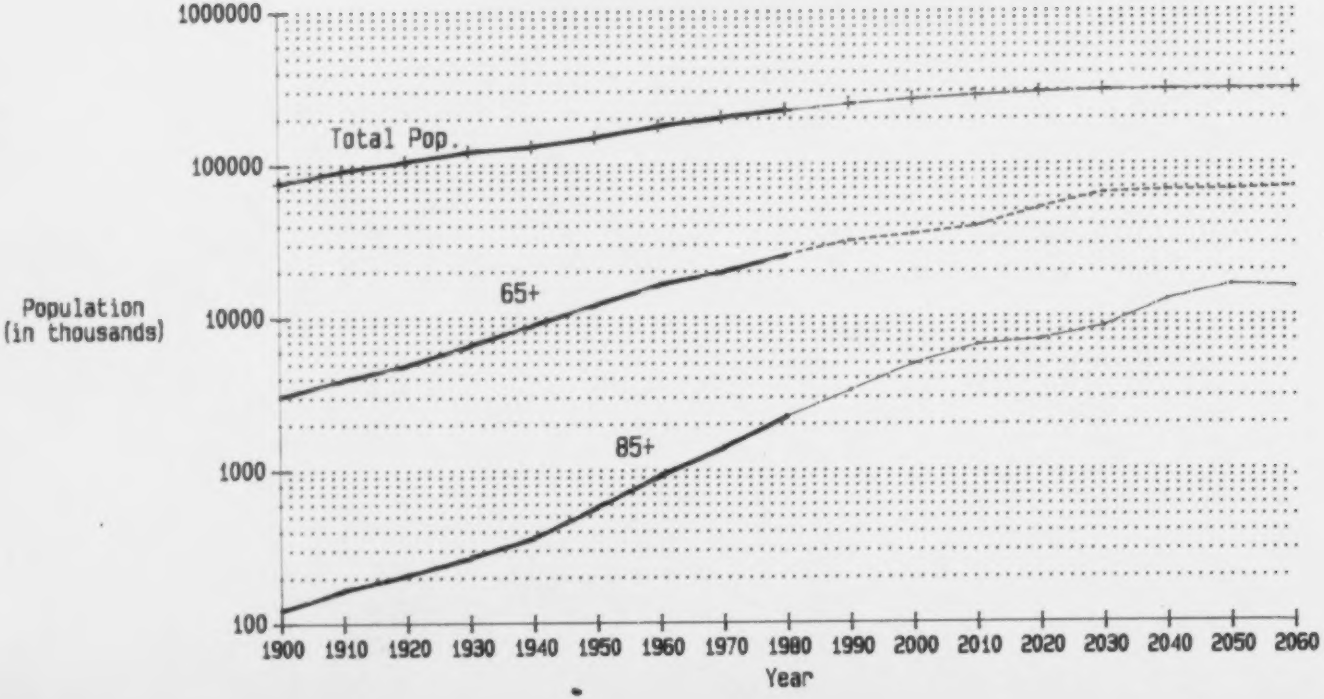
population line on the chart indicates the rate of growth of the population. On the vertical axis of population size, any equal distance indicates an equal increment, or rate, of change. This is in contrast to the horizontal axis (and vertical axes on most other charts, as in the percentage axis on figure 2.2) on which an equal distance indicates an equal arithmetic difference, such as years. This characteristic of the chart permits two kinds of comparisons that are not demonstrated in standard line charts. First, the steepness of different curves on the same chart can be compared; in this case, the steepness of the line for the total population can be compared to that for each of the elderly population groups to compare the relative rates of growth. Second, the steepness of different segments of a line can be compared; here, the differences in rates of growth in the populations over different time periods can be compared. (For further discussion of semilogarithmic charts, see Schmid, Calvin F. Whatever Has Happened to the Semilogarithmic Chart? The American Statistician. Vol. 40. Aug. 1986. p. 238–244.)

Figure 2.1
Population Aged 65 and Over,
85 and Over, and Total Population:
Actual Population, 1900 - 1980
Projected Population, 1990 - 2060
(Bureau of the Census Projections)



Between 1980 and 2050, the oldest old population is projected to grow at a rate twice as fast as the elderly population as a whole and seven times as fast as the total population (at average annual rates of 2.8, 1.4, and 0.4 percent, respectively). However, there would be some very notable periods in the future when the rate of growth of the oldest old would be much more rapid. Between 2030 and 2050, when the baby boom would be reaching these ages, the average annual rate of growth would be 3.1 percent, compared to a slower rate of 2.7 percent between 1980 and 2030.

### *3. The Elderly as a Share of the Total Population*

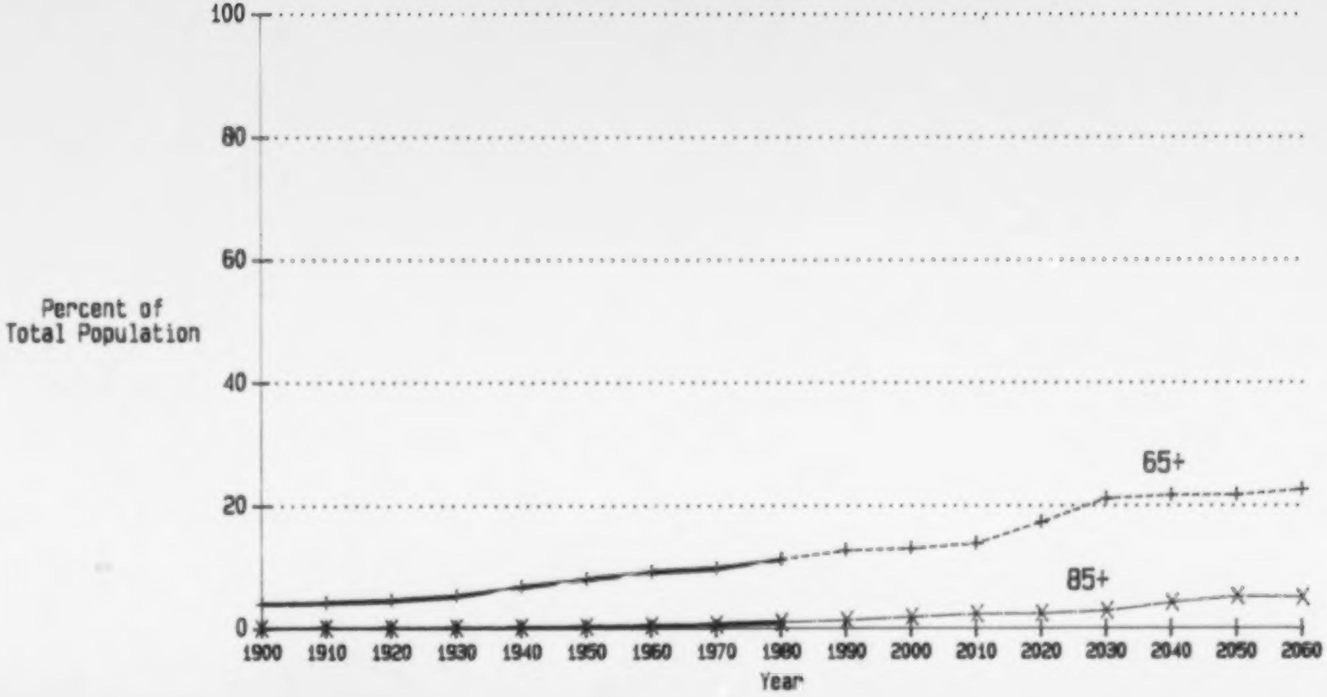
The result of these differences in rates of growth of different segments of the population is that a larger share of the total population is elderly now than at the turn of the century, and that share will continue to increase over the next 50 years. As figure 2.2 shows, the share of the total population that is elderly nearly tripled between 1900 and 1980 (from 4 to 11 percent); during the years of the baby boom, the number of births was so high that this share increased more slowly, even though the size of the elderly population increased steadily. Under the assumptions of the middle series population projections, that share would continue its moderate increase between now and 2010. However, after that, the baby boom will reach retirement age and that share would double again between 1980 and 2040.

Under these assumptions the share of the population that is elderly will not decline after the baby boom; rather, after the rapid increase associated with the aging of the baby boom, the percent elderly in the population will level off at 22 to 23 percent. The very low fertility following the baby boom and assumed to continue into the future would carry with it a stabilizing effect on the age distribution. The population would have a large share of elderly as long as there were no unexpected increases in fertility or mortality. Selected implications of this increasing share of elderly in the population are explored below in the chapter on dependency ratios.

Whereas for most of this century the oldest old have comprised less than one percent of the total population—even in 1980 they were just under that figure—by 2040 nearly 5 percent of the population will be among the oldest old, as figure 2.2 also shows. This is a higher share than those 65 and over were of the total population in 1900.

Because of the very rapid growth of the oldest old population, the share of the elderly population that is oldest old has more than doubled in this century, as shown in table 2.3. Between 1900 and 1980, the share of the elderly that was 85 and over more than doubled. By 2050, that share will more than double again, so that about one in five elderly persons would be in the oldest old.

Figure 2.2
Percent of the Total Population That
Is Aged 65 and Over or 85 and Over:
Actual Population, 1900 - 1980
Projected Population, 1990 - 2060
(Bureau of the Census Projections)



## TABLE 2.3.—PERCENT OF ACTUAL AND PROJECTED ELDERLY POPULATION THAT IS AGED 85 AND OVER: 1900–2060

[Bureau of the Census Projections]

| Year | Percent |
|---|---|
| Actual: | |
| 1900 | 3.99 |
| 1910 | 4.23 |
| 1920 | 4.26 |
| 1930 | 4.10 |
| 1940 | 4.05 |
| 1950 | 4.70 |
| 1960 | 5.61 |
| 1970 | 7.05 |
| 1980 | 8.77 |
| Projected (middle series): | |
| 1990 | 10.21 |
| 2000 | 13.22 |
| 2010 | 15.01 |
| 2020 | 11.74 |
| 2030 | 11.17 |
| 2040 | 16.16 |
| 2050 | 19.68 |
| 2060 | 17.98 |

Source: Based on data from U.S. Department of Commerce. Bureau of the Census. Decennial Censuses of Population, 1900 to 1980. U.S. Department of Commerce Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25. No. 952. Washington, D.C. May 1984. (1990-2060). Table 6.

As the first members of the baby boom reach age 65 just after 2010, however, for a 20-year period the share of oldest old in the elderly population is expected to drop considerably. Although the share of the total population that is elderly will increase, the greater increase will be among the youngest old (persons 65 to 84), a group whose members are generally less dependent.

### B. WHAT FACTORS HAVE LED TO THE AGING POPULATION?

Although birth rates are often thought of as the major determinant of population growth, all aspects of demographic growth have affected the aging of the U.S. population in this century. Since 1900, the United States has experienced important shifts in fertility, mortality, and immigration that have led to a radically changed age distribution.

#### *1. Birth Rates*

With the important exception of the baby boom, declining birth rates through the entire century (and earlier) have led to smaller shares of the population among the young and larger shares among the aged. Each successive age cohort [5] since early in the 1800s have had fewer children in each family than the previous group. As a result, each cohort is smaller in comparison to its parents than the cohort before it was. For example, the size of the 1920–1924 cohort is smaller relative to the size of its parents' cohort than is the size of the 1900–1904 cohort compared to its parents' cohort. This has led to the aging of the population in a relative sense; that is, the elderly form a larger share of the total population because there are fewer young people compared to the size of the older cohorts in each succeeding generation.

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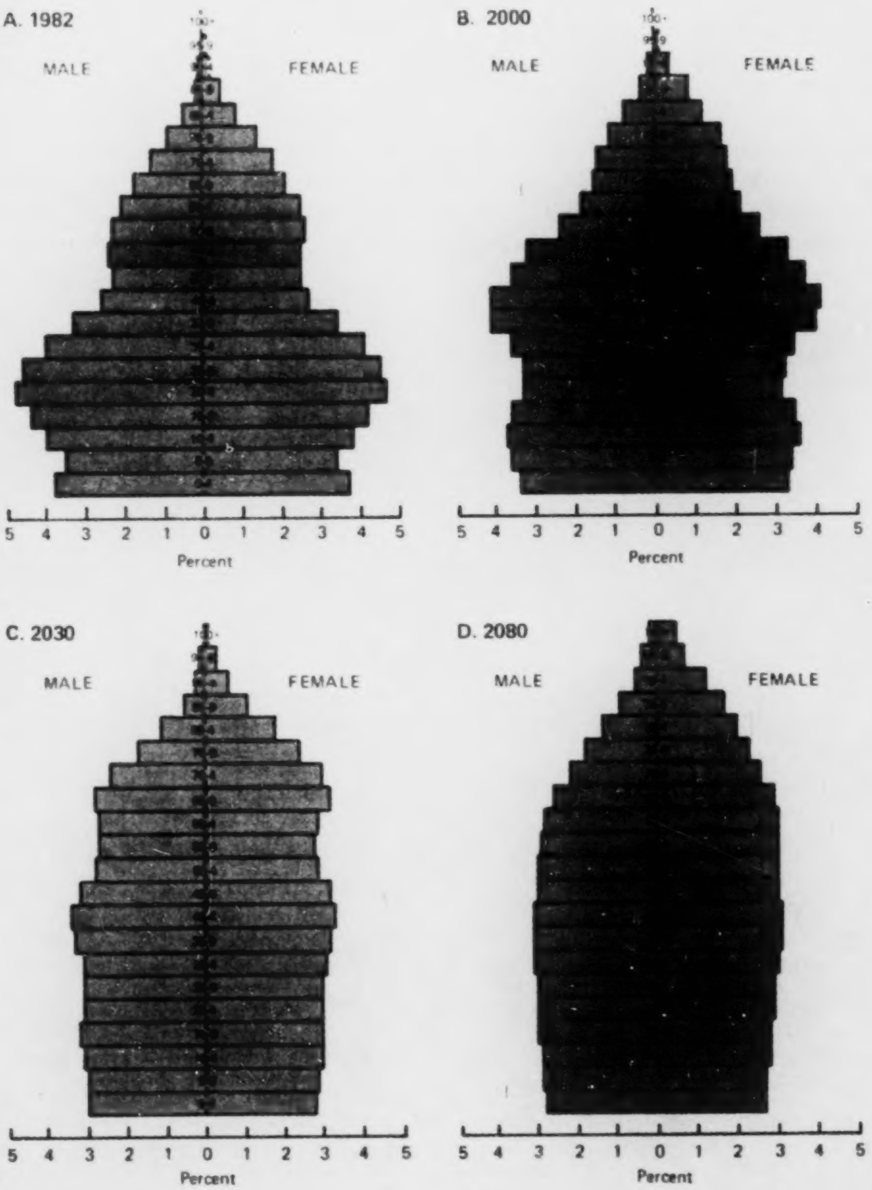
[5] A group of people born over a specified time period (the most commonly used is a 5-year period) is called an age cohort; for example, persons born from 1900 to 1904 are known as the 1900–1904 age cohort.

Figure 2.3 shows some of the projected effects of continued low fertility. The series of charts (population pyramids) show, for selected years, the percent of the total population composed of males and females in each 5-year age group. The charts for successive years demonstrate that as the population ages, males and females of older ages form a larger share of the total population and the younger cohorts form a smaller share. The baby boom shows up clearly in the 1982 chart in the bulge for the age groups from 15 to 39. In later years, however, with underlying assumptions of only gradual changes in fertility and mortality, the age pyramids assume a more rectangular shape. The younger age groups are a smaller share of total population and the older age groups are relatively larger, so that until later ages, each age group forms about the same share of the total population.

FIGURE 2.3.
**Percent Distribution of the U.S. Population, by Age and Sex**



Source: U.S. Bureau of the Census, Projections of the Population of the United States by Age, Sex and Race: 1983-2080. Series P-25, no. 952.

### *2. Immigration*

Large waves of immigration in the beginning of the century through the mid-1920s increased the working age population at the time and, later, the elderly population. In 1930, 9.0 percent of the population aged 20 to 29 had been born in a foreign country; by 1960 only 2.9 percent of that age group had been.[6] The surviving foreign born persons of that age group in 1930 are now aged 75 to 84; those of 1960 are now 45 to 54. Thus, immigration has contributed considerably to the current age structure of the population because immigration has added relatively more to the numbers of aged persons than of younger persons. Indeed, the 1980 census found that 11.7 percent of the population aged 65 and over was born in a foreign country, compared to 7.2 percent of persons aged 25 to 64.[7] The difference was even greater among the oldest old; about 19 percent of these people were foreign born.[8]

### *3. Mortality Rates*

Declining mortality rates have played very significant roles in the aging of the population as well. In recent years in particular, improvements in mortality rates have significantly extended the period an adult could expect to live. In the first forty years of the century, death rates due to infectious diseases (such as pneumonia, influenza, and tuberculosis) declined sharply. These improvements in mortality affected persons of all ages; their contribution to the aging of the population was primarily through enabling young children to live past ages when they were previously likely to succumb to infectious diseases. In the twenty or so years in the middle of the century, relatively few improvements were made in controlling mortality.

Beginning in the 1960s, however, important advances were made in reducing the risk of death associated with heart attacks and stroke.[9] These improvements, unlike the earlier ones, specifically reduced mortality at older ages, and contributed to sharp increases in the number of years a person age 65 could still expect to live, as shown in figure 2.4. In the twenty years from 1960 to 1980, life expectancy at age 65 (for men and women combined) increased nearly 14 percent, from 14.4 to 16.4 years. In contrast, life expectancy at birth increased only about 5 percent, from 69.9 to 73.7 years. These relative improvements are very different from those experienced earlier when infectious diseases were being brought under greater control; from 1900 to 1940, life expectancy at age 65 improved only 8 percent in comparison to a 30 percent improvement in life expectancy at birth.

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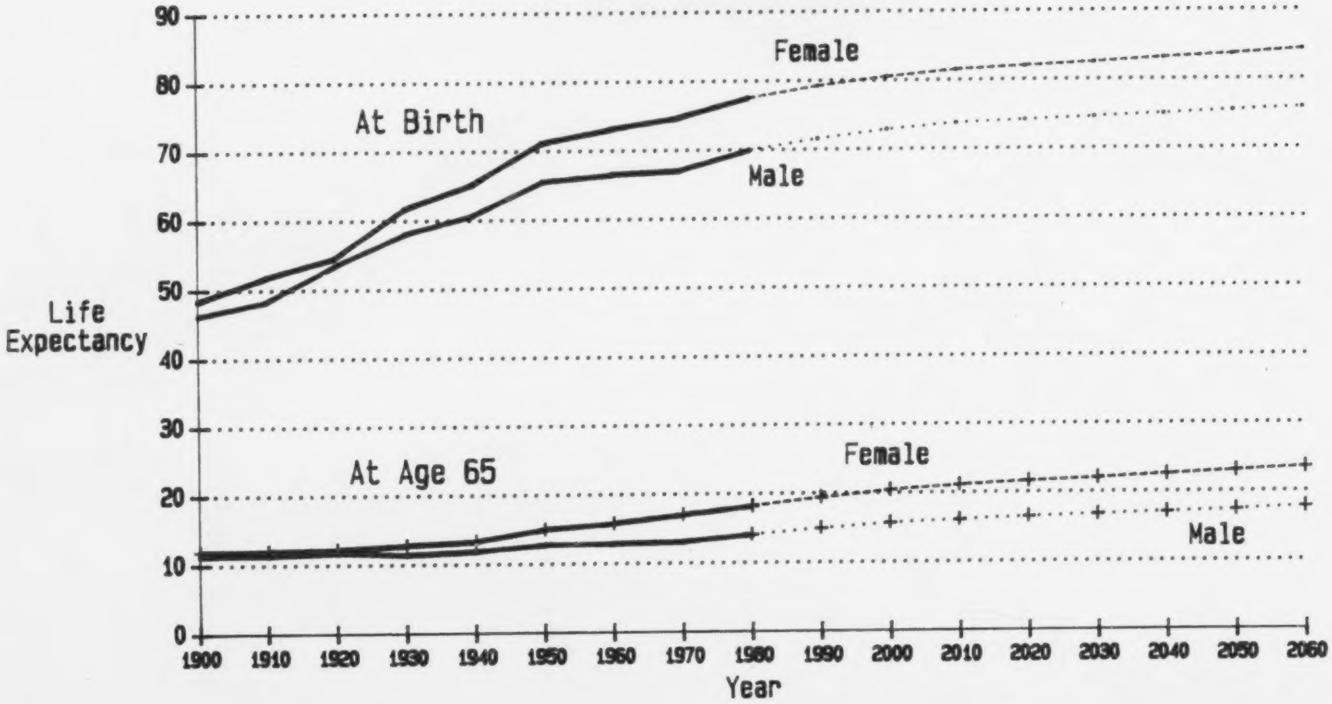
[6] U.S. Department of Commerce. Bureau of the Census. Historical Statistics of the United States: Colonial Times to 1970. Part I. U.S. Government Printing Office. Washington, D.C. 1975. p. 15-16.

[7] U.S. Department of Commerce. Bureau of the Census. 1980 Census of Population. Detailed Population Characteristics. Part 1. United States Summary. PC80-1-D1-A. Washington, D.C. Mar. 1984

[8] Rosenwaike, Ira. A Demographic Portrait of the Oldest Old. Milbank Memorial Fund Quarterly. Vol. 63. Spring 1985. p. 198.

[9] Crimmins, Eileen M. Implications of Recent Mortality Trends for the Size and Composition of the Population Over 65. Review of Public Data Use. Vol 11. Mar. 1983. p. 38.

Figure 2.4
Actual and Projected
Life Expectancies at Birth and
at Age 65 for Men and Women:
1900 - 2060
(Bureau of the Census Projections)



Recent improvements were particularly sharp among the oldest old. In this age group cardiovascular conditions are increasingly associated with the causes of death. As a result of the major improvements in death rates associated with these conditions, the decline in mortality between 1966 and 1977 was higher among persons 85 and over than in any other age group over age 25.[10]

According to the assumptions of the middle series of the Census projections, recent improvements in mortality would not be sustained over the next half century. Although life expectancy at birth improved by 31 percent in the last 60 years, these projections assume an improvement of only 7 percent over the next 60 years. Life expectancy at age 65, which improved 31 percent from 1920 to 1980, is projected to improve 27 percent by 2040.

There are several reasons to expect that past improvements in life expectancy might not be sustained. First, as past mortality reductions have brought death rates at young ages to very low levels in this country (with some important exceptions), further improvements become infeasible; to the extent that most children are living well into adulthood, there is relatively little remaining mortality to be reduced.

Second, among the elderly in particular, recent improvements in mortality associated with heart attacks and strokes have had dramatic effects. Further advances will have to be achieved by reducing mortality associated with the many various types of cancer, the second leading cause of death. Many researchers believe that these advances will be harder to achieve, and as a result future advances would be slower. Because cancer itself assumes many forms and has multiple causes, breakthroughs are more likely to be incremental and to affect fewer people at a time than have the breakthroughs associated with the prevention and treatment of heart disease.

Third, as the life expectancy of the population increases, it approaches some unknown level that medical practitioners believe defines the length of time a human can live, called the life span. The life span is biologically determined whereas life expectancy is determined both by biological factors and by cultural factors related to health, nutrition, accident, and violence. As the life expectancy in this country increases, many demographers assume it is approaching the human life span and further increases in life expectancy will be harder to achieve.

Nevertheless, the assumptions of much slower improvements against mortality in the future are not generally accepted by all demographers; some believe recent mortality improvements are more likely to continue for at least the immediate future.[11] Arguments are presented that technological breakthroughs cannot be foreseen, but that they have been occurring with such regularity in recent years that they should not be discounted in the future. Although there is a broad acceptance that there is some limit to the human life span, not all experts believe that we are close enough to approaching that limit to let that factor govern assumptions about future life expectancies.

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[10] Rosenwaike, Ira, Nurit Yaffe, and Philip Sagi. The Recent Decline in Mortality of the Extreme Aged: An Analysis of Statistical Data. American Journal of Public Health. Vol. 70, Oct. 1980. p. 1078.

[11] Crimmins. Implications of Recent Mortality Trends.

### C. WHAT OTHER ASPECTS OF SLOWING POPULATION GROWTH MAY BE IMPORTANT?

The aging of the population is actually just one facet of the more general slowing of population growth in this nation. In the absence of that slowing, the share of the population that is aged would not have reached current levels; nor would it increase at the same rates as currently projected. Rapid growth in all segments of the population can obscure and minimize the effects of changes in particular subsets of a population. As growth slows, demographic factors other than growth assume more social and economic importance than they otherwise might, because they occur in a context of a fixed population size. In addition to aging, other aspects of the population change as overall growth slows. This section demonstrates that the aging of the population does not occur in isolation, but in the context of broad changes in other characteristics of our society that are also strongly influenced by demographic changes related to aging.

The stress placed on economic institutions by slowing population growth may be largely a function of the speed of transition from a more rapidly to a more slowly growing population. When demographic changes occur slowly, the economy and the society have ample opportunity to adjust; however, when changes are more rapid, social and economic institutions may have a more difficult time adjusting. In the latter case, a society may experience temporary dislocations until changes are made to accommodate the new demographic composition of the population.

In the United States, the transition has actually been very slow, thus far taking place over the course of more than a century. However, as the rate of growth achieves a relatively stable level (though there is no agreement as to whether this has happened in the United States), the importance of fluctuations in the rate of growth increases dramatically.[12] Sharp demographic fluctuations in a generally slowly growing population act in a manner similar to major rapid changes in long-term demographic patterns. However, such fluctuations can necessitate short-term adjustments that may not make long-term sense. A frequent presumption is that the economy will adjust to gradual changes resulting from the general slowing of population growth, but that substantially greater disruptions will be imposed by these large fluctuations over relatively short periods of time.[13] Such problems were seen in the need to build more schools in the 1950s and 1960s to accommodate the baby boom; by the 1970s, however, these schools were no longer needed for that purpose. This very visible phenomenon is one of the factors that has focused national attention on the impact of the aging baby boom. The baby boom resulted from an upward, but relatively brief, fluctuation in fertility rates, which subsequently resumed their longer term downward trend.

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[12] Serow, William and Thomas Espenshade. The Economics of Declining Population Growth: An Assessment of the Current Literature in Economic Consequences of Slowing Population Growth. Thomas Espenshade and William Serow, eds. New York. Academic Press. 1978. p. 13-40.

[13] Clark, Robert L. Policy Implications and Future Research Needs in The Economic Consequences of Slowing Population Growth. Thomas Espenshade and William Serow, eds. New York. Academic Press. 1978. p. 247-261.

### *1. Working Age Population*

Although the "aging of the population" may call to mind a population with a small share of children and a large share of people age 65 and over, it actually affects the entire age distribution in important ways. The working age population also grows older, and as it does so, the prevalence of more experienced workers increases and that of younger, less skilled workers decreases. In 1980, 32.2 percent of the working age population (aged 18 to 64) was aged 45 to 64. Under the middle series assumptions, in 2020, that figure would increase to 42.7 percent, and in 2050, 41.9 percent.

### *2. Race and Ethnicity*

To the extent that different race groups have different underlying rates of growth, as population growth slows the racial composition of the population will change; in the United States, both blacks and Hispanics have higher fertility and mortality rates than whites and other race groups. As a result, projections indicate that a larger share of the population will be in these groups. Under the Census projections (middle series), in 2020, 14.9 percent of the population would be black, compared to 11.7 percent in 1980. By 2050, that figure would increase to 16.9 percent. (Projections have not been prepared for other race and ethnic groups, such as Asian Americans or American Indians.)

Another recently published Census document provides projections of the Hispanic population under a variety of assumptions about fertility, mortality, and immigration. These projections indicate that under assumptions of a constant level of Hispanic net immigration of 143,200 per year (compared to the actual level of 191,000 in 1982), future increase of the Hispanic population would be affected more by the balance of births and deaths in the Hispanic population than by net immigration. Even under the highest assumed levels of net immigration (361,500 per year) the balance between births and deaths plays a more important role in the future increase of the Hispanic population than does net immigration. Under all of the Census assumptions, the Hispanic population would increase considerably faster than the remaining U.S. population for the foreseeable future. As a result, under the middle series of these projections (which are consistent with the projections of the population discussed in the remainder of this chapter), the Hispanic population [14] would increase as a share of the population from 6.8 percent in 1982 to 12.3 percent in 2020, and 16.4 percent in 2050. The range on these figures is considerable, depending on the assumptions made about factors of growth; in 2020, the projected share ranges from 11.5 percent in the lowest series to 15.2 percent in the highest. In 2050, the range is from 15.9 to 22.5 percent.[15]

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[14] The figures used for the black and Hispanic population are not mutually exclusive; some persons are both black and Hispanic. The Census Bureau does not provide separate projections for non-Hispanic black, and so these data cannot be added to estimate the total black and Hispanic population.

As a result of the changing shares of different race and ethnic groups in the population, the white, non-Hispanic population is projected to decline as a share of the total population. Under the middle series, its share would decline from 79.1 percent in 1982 to 68.9 percent in 2020 and 61.6 percent in 2050.

The race and ethnic composition of the elderly population will also change. From 2.9 percent of the population 65 and over in 1982, the Hispanic population will increase to 7.5 percent in 2020 and 11.7 percent in 2050. The black population will increase its share from 8.1 percent in 1982 to 9.9 percent in 2050. The share for the white, non-Hispanic elderly population will decrease from 87.8 percent in 1982 to 79.2 and 69.9 percent, in 2020 and 2050, respectively.

The effects on the working age (25 to 64) population are even sharper. By 2020, the Hispanic population would increase from 6.6 to 11.6 percent of the working age population, and the black population's share would increase from 10.9 to 14.7 percent. The share for the white, non-Hispanic population would decrease from 80.1 to 69.7 percent. Through 2050 these figures would continue their trend: the working age population would be 16.9 percent Hispanic, 17.2 percent black, and 60.8 percent white non-Hispanic.

### *3. Immigration*

Because the relative importance of immigration increases rapidly as the number of births and deaths become closer to one another, the balance of native born and foreign born in the population is projected to change under the Census middle series assumptions. A higher share of the population would be foreign born. Between 1970 and 1980, an estimated 22.2 percent of total population growth resulted from immigration.[16] Between 2010 and 2020 the total population would increase by 13.4 million. In this period, 30.2 percent of the growth would be the direct result of immigration. By 2040 to 2050, there would be substantially more deaths than births in the population, and immigration would serve as the only source of population growth; in the absence of immigration in this period, the population would actually be projected to decline by nearly 6 million.[17]

### *4. Growth of Areas Within the Country*

As national growth rates decline, the importance of migration among areas of the country increases. Whereas widespread growth can sometimes mask outmigration (migration away from one area to other areas of the country), when the national population is no longer growing from a greater number of births than deaths, the level of in- or out-migration in specific communities is the dominant factor of local growth or decline. When patterns of migration inside the nation develop, such as outmigration from central cities, particular types of areas can experience related economic distress.

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[15] U.S. Department of Commerce. Bureau of the Census. Projections of the Hispanic Population: 1983 to 2080, by Gregory Spencer. Current Population Reports. Series P-25. No. 995. Washington, DC Nov. 1986

[16] U.S. Bureau of the Census. Estimates of the Population of the United States and Components of Change: 1970 to 1984. Current Population Reports. Series P-25, No. 971. p. 2.

[17] U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25. No. 952. Tables 10 and 12.

### *5. Family Composition and Socioeconomic Change*

Other socioeconomic factors also are related to demographic change. Higher divorce rates have been associated with lower completed family size for women who divorce, a factor in slowing population growth. If divorce rates remain high or increase further, the share of female-headed families in the population would increase. The number and type of families are sensitive to demographic assumptions.[18] As a result, the composition of families may change faster than the size of the total population.

Finally, future changes in the distribution of economic well-being in the society depend on changes in family composition and differences in birth rates among people of different socioeconomic levels.[19] All other things being equal,[20] low marriage rates, high divorce rates, and higher fertility rates among the lower income population would all tend to increase the share of families with lower income. In contrast, lower fertility overall would reduce the income needs of many families. Since a higher share of divorced women actually works, whether they have children or not, increasing divorce rates could lead to higher overall labor force participation rates in the working age population.

## II. SENSITIVITY OF POPULATION PROJECTIONS TO UNDERLYING ASSUMPTIONS

The one thing that can be known for certain about projections is that they are likely to prove false. This assertion is as valid for population projections as for any projections, even though the variables that feed into population projections are relatively simple and may seem straightforward to anticipate. Even the word projections connotes the lack of certainty about accuracy. Few demographers make actual population predictions. They project what future levels and characteristics of population would be if certain plausible assumptions about recent demographic patterns hold true.

An important consideration in interpreting current population projections is the potential for change in the assumptions about each of the components of growth: fertility, mortality, and immigration. Each is likely to change in ways that reflect the nature of the component iteself. For instance, levels of immigration are subject to legislative action and can change rapidly. Law enforcement policies also affect the flow of illegal immigrants and the likelihood that they will remain in this country. Either type of immigration can increase or decrease, responding to economic conditions and public policy. Mortality is subject to the improvement of health delivery systems, to technological advances, and to changes in health-related behavior in the population. Generally, this factor has moved only in one direction, towards improved mortality rates and consequently to more rapid population growth. Fertility is now subject to a greater degree of personal control than ever before. As a result, trends in personal tastes and families' economic needs will play a much greater role in determining future fertility patterns. In certain respects, this factor is more difficult to project than either of the others because it can fluctuate widely and unexpectedly, as it has over the last four decades.

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[18] Wertheimer, Richard F., II and Sheila R. Zedlewski. The Impact of Demographic Change on the Distribution of Earned Income and the AFDC Program: 1975–1985. In The Economic Consequences of Slowing Population Growth. Thomas J. Espenshade and William J. Serow, eds. Academic Press. New York. 1978. p. 197–224.

[19] Rindfuss, Ronald F. and James A. Sweet. The Pervasiveness of Postwar Fertility Trends in the United States, in Social Demography. Karl E. Taeuber, Larry L. Bumpass, and James A. Sweet, eds. Academic Press. New York. 1978. p. 15-42.

[20] An assumption that is admittedly only infrequently met.

### A. HOW ACCURATE HAVE PAST PROJECTIONS BEEN?

The Bureau of the Census has been making population projections for several decades, and earlier projections and assumptions about fertility, mortality, and immigration can be compared to what has actually happened or to later estimates to determine how assumptions made in the past have held up to the test of time. Comparisons of actual numbers to projections of the population age 65 and over that have been made since the early 1950s show two important points.[21] First, projections tend to be more accurate when they are to nearby dates; projected populations for more distant dates tend to fall further from the mark. A comparison of different projections of the aged population issued at various dates since 1953 with the estimated population aged 65 and over in 1975 shows that earlier projections consistently and considerably projected too few aged persons in 1975. In the 1950s, projections tended to be about 8 percent too low. Even through the late 1960s, projections for less than 10 years in the future were 6 percent too low. Projections issued in the 1970s gradually closed in on the estimated population, although even in 1972, the projection was 2.5 percent under the actual 1975 population. The second point about projections is that they may vary considerably from one set to the next. As new information is learned and incorporated into successive series, projections of the same age and sex group for the same date often change. A comparison of previous projections of the 65 and over population for the year 2000 to more-recent projections demonstrates these differences. After 1964, successive projections have come gradually closer to the most recent projections, issued in 1984. Again, all the earlier series were lower than the last, ranging from more than 19 percent lower in the earlier projections (issued in 1964 and 1967) to about 9 percent lower (in the projections issued in 1977), compared to the projections issued in 1984.

The above comparisons all used the most recent middle series of the Bureau of the Census for consistency. They demonstrate that although population projections are useful for consideration of the policy implications of continuation of current demographic trends, they do not necessarily perform well as predictors of future population. The comparison of sequential issuances of projections supports using projections in an iterative process in policy development, factoring in new information as it becomes available. In the case of the aged population in particular, subsequent estimates and later projections both indicate that previous series have tended to underestimate the future sizes of this group. Although recent corrections have attempted to address the primary source of this problem—underestimates of future improvements in mortality levels—it is unknown whether demographers have still remained too pessimistic about future mortality improvements.[22] If they have, current projections of the aged population will also be too low.

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[21] Data for this discussion are from Siegel, Jacob S. Prospective Trends in the Size and Structure of the Elderly Population, Impact of Mortality Trends, and Some Implications. Current Population Reports. Series P-23, No. 78. U.S. Bureau of the Census. Washington, D.C. Jan. 1979. p. 17.

### B. IF THE UNDERLYING ASSUMPTIONS ARE CHANGED, WHAT ARE THE EFFECTS ON THE PROJECTIONS?

Another approach to improved understanding of the possible variability associated with projections is to examine the effects of altering specific assumptions. In the Census projections, the fertility, mortality, and immigration assumptions can be examined separately. In producing the middle series, the Bureau used what it identified as the "middle assumptions" for all three factors of growth. In addition, however, it produced projections using "high" and "low" assumptions about the levels of each factor; it thus produced a number of projection series, using all possible combinations of high, middle, and low levels for future fertility, mortality, and immigration.

The Bureau selected specific combinations of these levels to serve as examples for a range of projections. Although the middle series is identified as the series thought to be most likely, detailed information is also provided on a low and a high series to provide a range of likely growth. Figures 2.5, 2.6, 2.7, and 2.8 show the range for some of the projections shown earlier in this discussion. These figures show the high degree of sensitivity of projections to the combined underlying assumptions.

The range of population aged 65 and over in 2050 represented in the projections is substantial, as shown in figure 2.5. In fact, in 2050 the high series would imply an elderly population nearly 47 percent larger than the low series. In 2020, the difference is only 20 percent, because more of the elements of that population are already in place. Future fertility will not affect the size of the elderly population in 2020, but it will to a small degree in 2050. The effects of different assumptions about future levels of immigration and mortality will increase as time passes.

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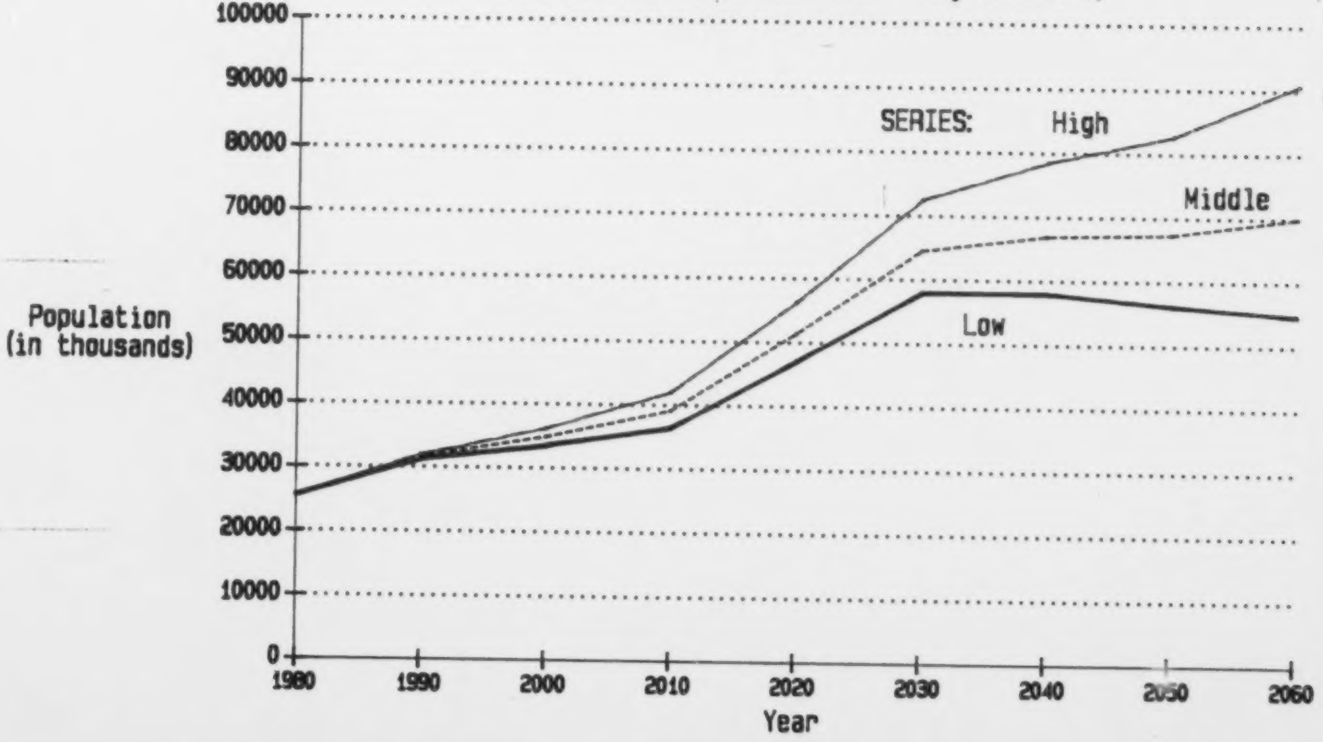
[22] Continued mortality improvements (larger than projected) would constitute a "pessimistic" assumption by Social Security actuaries because it would result in a larger-than-anticipated drain on the trust funds.

Figure 2.5
Actual and Projected Population
Aged 65 and Over: 1980 - 2060
(Bureau of the Census Projections)



The size of the future oldest old population is even more subject to differences in assumptions, as shown in figure 2.6. Even in 2020, the high series shows 63 percent more people aged 85 and over than does the low series. By 2050, the high series is more than 110 percent higher than the low series. As a result, the share of the elderly population that is oldest old is equally uncertain, as shown in figure 2.7.

Figure 2.6
Actual and Projected Population
Aged 85 and Over: 1980 - 2060
(Bureau of the Census Projections)

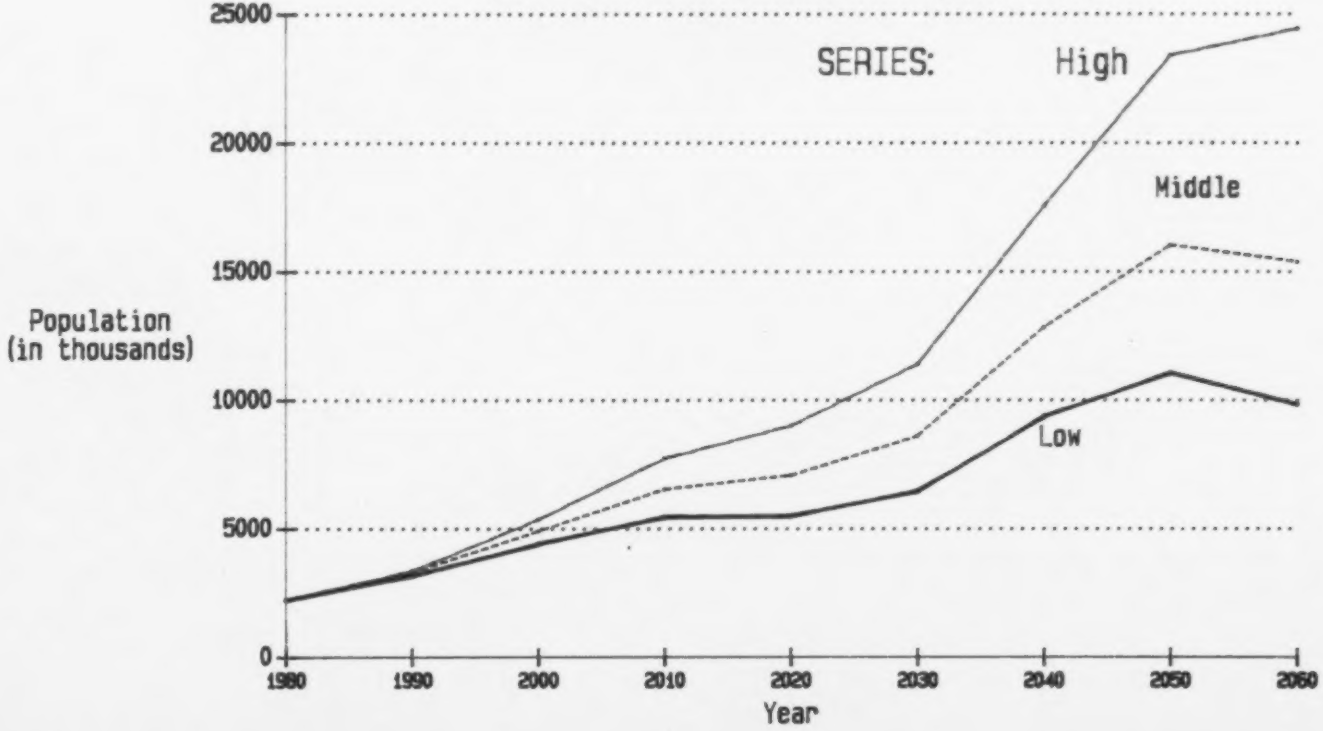
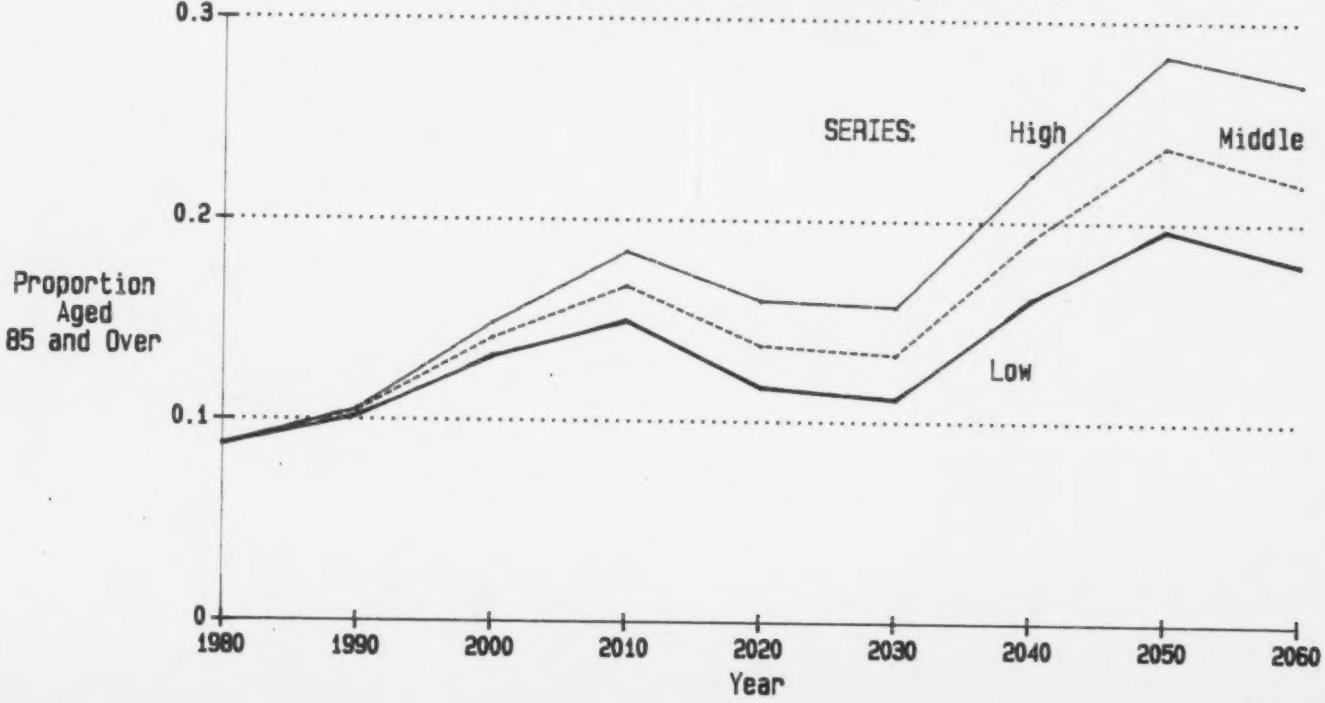
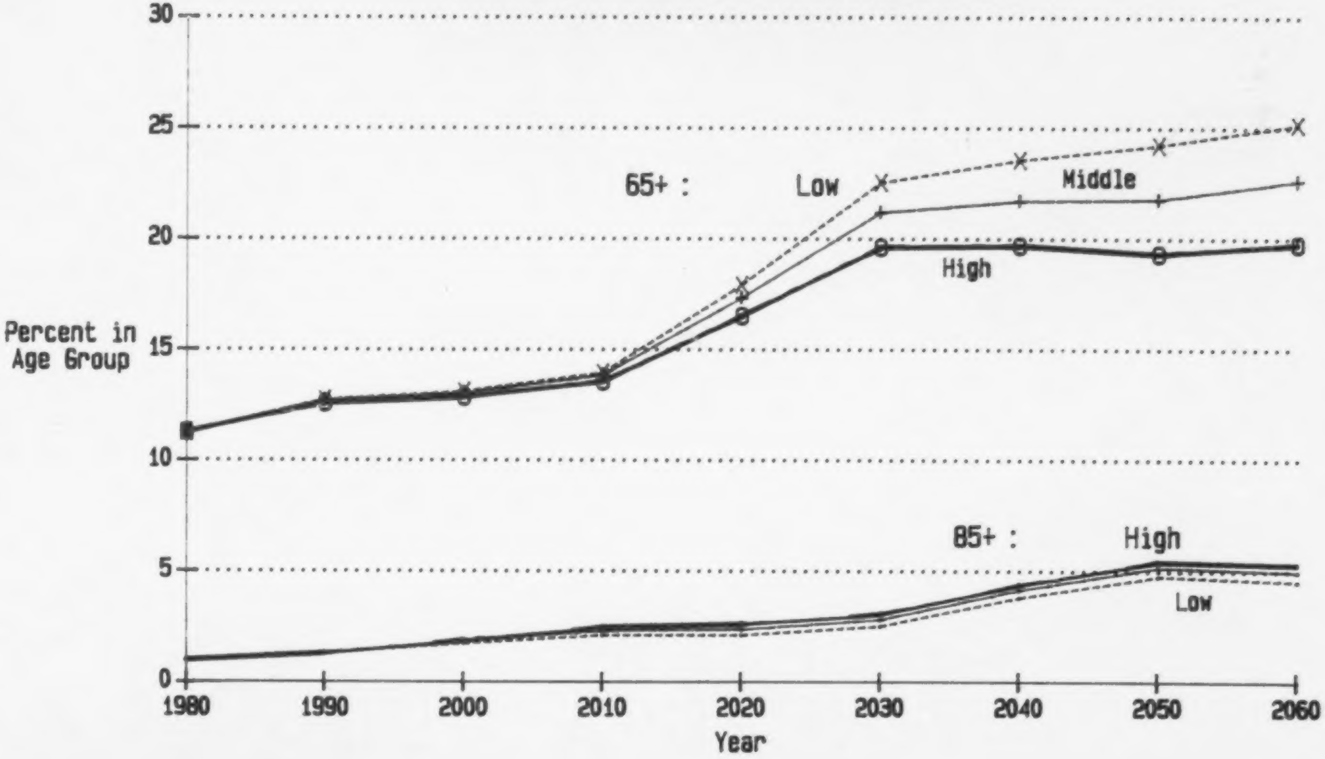


Figure 2.7
Proportion of Actual and Projected
Elderly Population That Is Aged 85 and Over:
1980 - 2060
(Bureau of the Census Projections)



Because the size of the total population will vary as well as the size of the aged population, the share of the population that would be aged under the different assumptions varies relatively less than the size of the aged population. Nevertheless, depending on which assumptions prove more correct, the future population of this country could have a considerably different share of elderly. As figure 2.8 shows, under the low projection series, the share of aged in 2020 would be just under 18 percent, while under the high series assumptions, that future would be 16.5 percent. By 2050 the gap widens to 24 and 19 percent for the low and high series, respectively. These figures suggest different levels of aged dependency in the future population; the high population growth series would imply a share that is about 20 percent smaller than that implied in the low-growth series.

Figure 2.8: Percent of Total Population That Is Aged 65 and Over or 85 and Over: Alternative Projection Series, 1980 - 2060 (Bureau of the Census Projections)



The second set of lines in the figure show that the projected percent of the population aged 85 and over is subject to less variability. While the high series implies that nearly 5.5 percent of the population of 2050 would be in this group (about the same share as the entire aged population was in 1930), the low series would suggest about 4.8 percent.

These figures demonstrate the combined effects of different assumptions about fertility, mortality, and immigration. However, these three factors are not equally important in their effects on projections of the size of the elderly population. The following discussion will examine each growth factor separately, to identify the effects of different levels of future change of that factor alone, while each of the other two factors are held at the middle level.

### *1. Mortality*

Since higher mortality is associated with lower population growth (through lower life expectancy), the low projection series assumes higher future levels of mortality than the higher series. The highest series assumes a mortality *improvement* of 0.29 percent per year from now through 2005 and 0.11 percent from then until 2060, leading to relatively low future *levels* of mortality; the lowest population series, in contrast, assumes much slower rates of improvement (and consequently higher mortality levels) of 0.08 percent per year through 2005 and 0.03 percent per year from then until 2060. The middle series assumes improvements of 0.18 percent per year in the earlier period and 0.06 percent per year in the later period.

These different assumptions about overall mortality improvement affect the projected life expectancy at birth and at age 65, as shown in Figures 2.9 and 2.10. The first figure shows the projected life expectancies at birth for males and females under the three different mortality assumptions. These projections imply that future improvements in male and female life expectancies at birth would be of about the same level; the improvements in female and male life expectancy at birth from 1980 to 2060 implied in the low mortality assumptions are 14.6 and 13.3 percent, respectively, and those of the high mortality assumptions, 4.3 and 4.4 percent, respectively. Under none of the assumptions, however, do male and female life expectancies converge.

Figure 2.9
Actual and Projected Life Expectancy
at Birth: 1900 - 2060
(Bureau of the Census Projections)

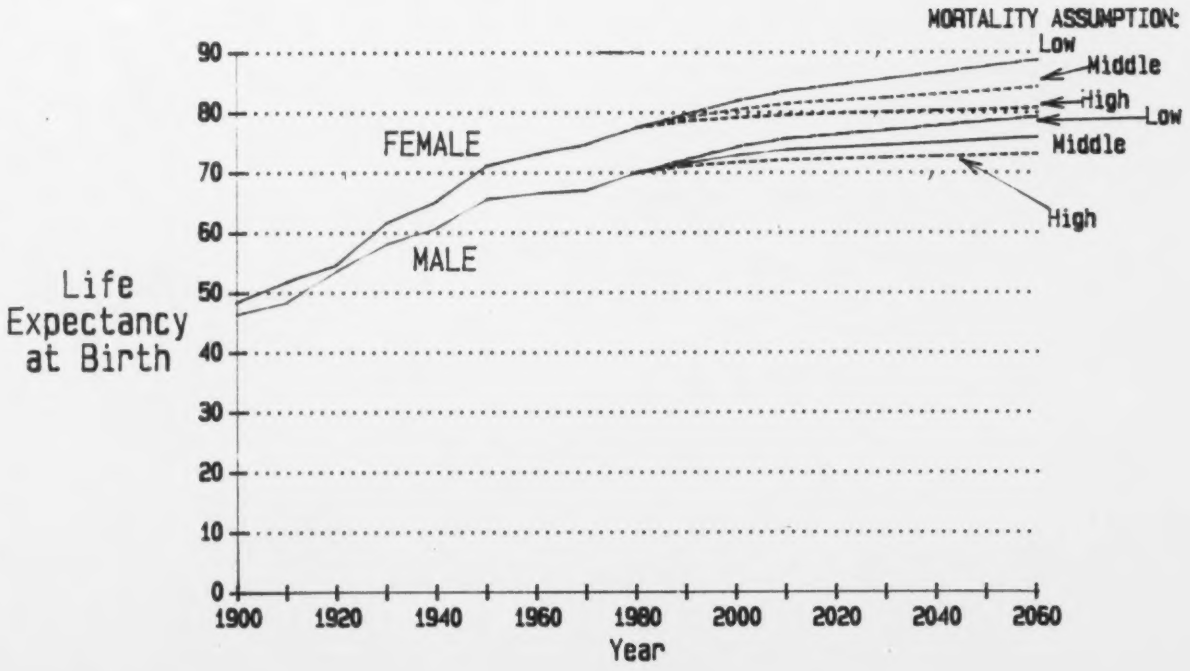
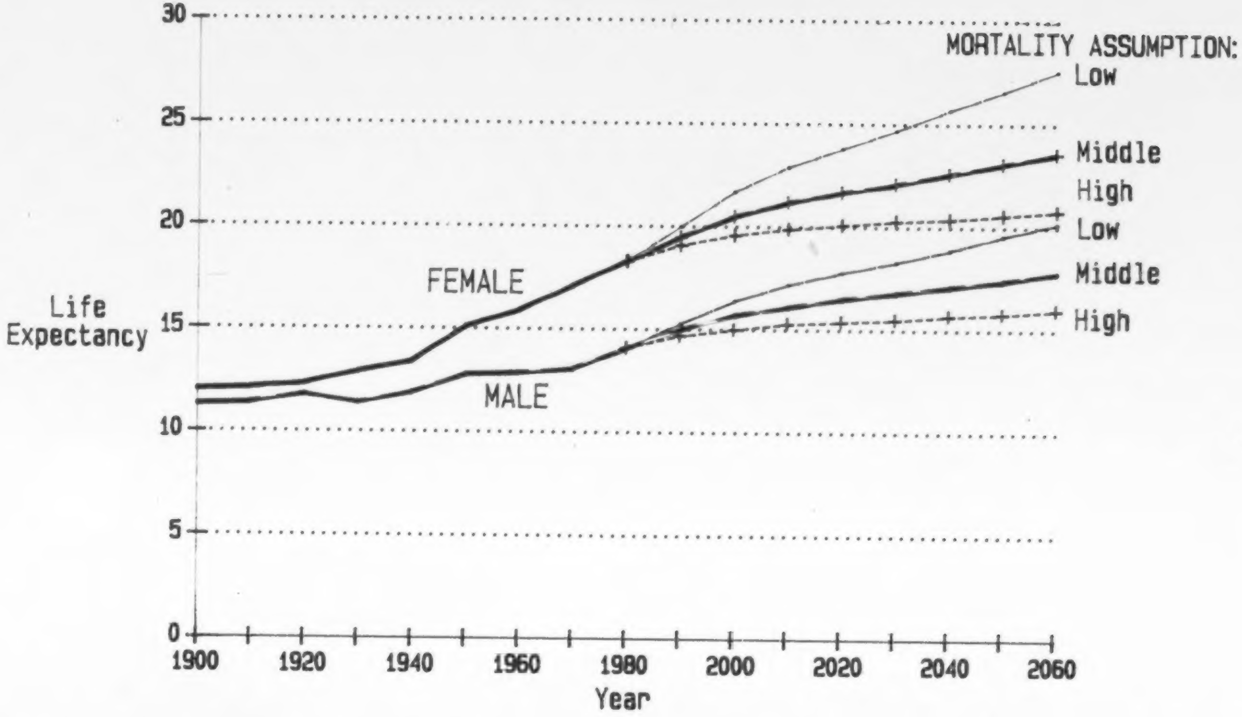


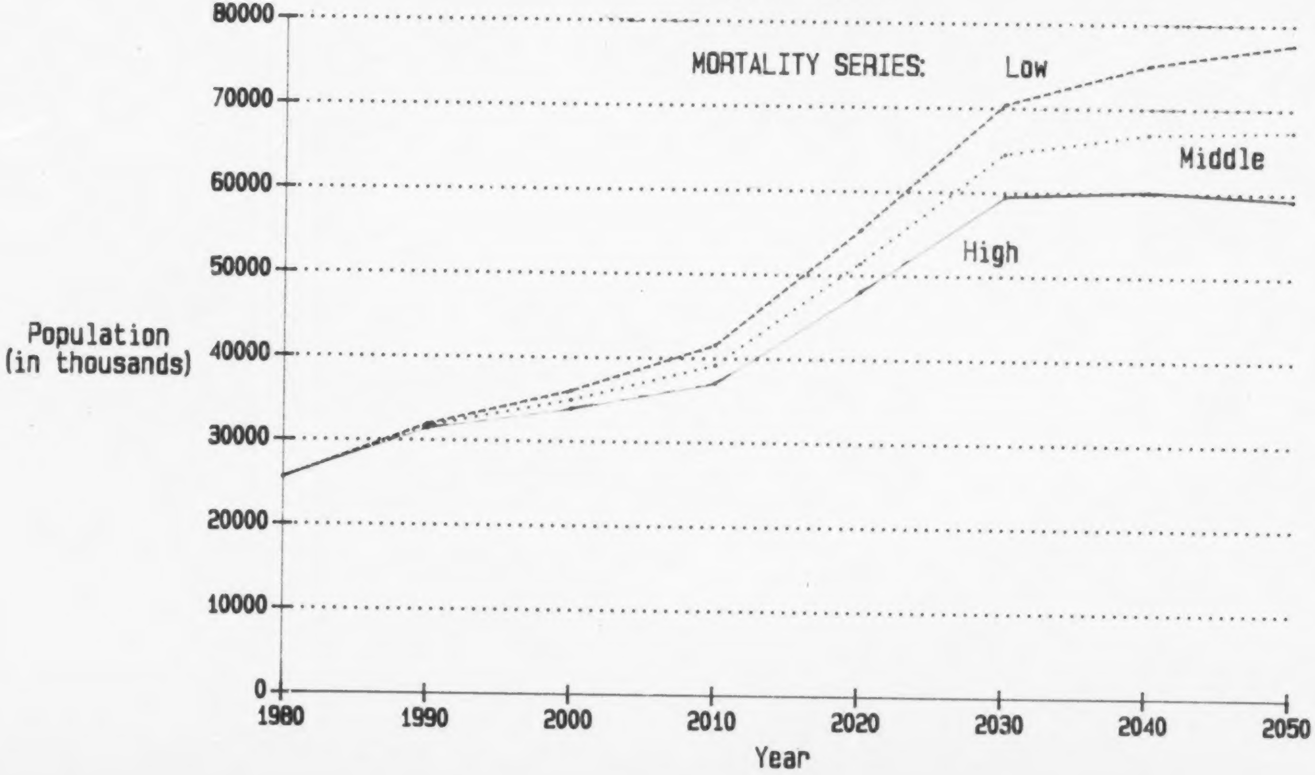
Figure 2.10
Actual and Projected Life Expectancy
at Age 65, 1900 - 2060
(Bureau of the Census Projections)



The life expectancies at age 65 would improve to a greater extent under all the assumptions than would life expectancy at birth, as figure 2.10 shows. Under the low mortality assumption (which shows higher levels of life expectancy), female life expectancy at age 65 would increase by 50.8 percent between 1980 and 2060, while for males the increase would be 43.3 percent. If this assumption were to prove correct, by 2020 women age 65 could expect to live another 24 years, and men, another 18 years; by 2050 that would increase to 27 and 20 years for women and men, respectively. Under the high mortality assumption, the improvement through 2020 for males would be about the same as for females—around 13.6 percent, leading to lower projected life expectancies.

The size of the projected elderly population is highly sensitive to these varying assumptions about mortality. Figure 2.11 shows the results of using different mortality assumptions while fertility and immigration assumptions are held at the middle level for each line on the chart. By 2050, the series with the low mortality assumption will produce an aged population more than 30 percent larger than the high mortality series; two-thirds of the entire difference in the projected aged population between the low and high series shown in figure 2.5 is attributable to the mortality assumption. The low mortality series would produce an aged population 12 percent larger (more than 8 million persons) than the middle series. This range of variation indicates that relatively small differences in the future rate of improvement in mortality will have very substantial effects on the size of the aged population.

Figure 2.11: Effects of Mortality Assumptions on Projections of Population Aged 65 and Over: 1980 - 2050



The effect of the mortality assumption on projected levels of the total population does not produce such a large relative difference, because, as noted above, much of the future improvement in mortality will have to occur in reducing causes of death associated with age. The low mortality series would produce a total population 3.5 percent larger than the high series by 2020 and 7.7 percent higher by 2050. Much of the differences in the projected total population will be among the elderly.

As a result of the greater variability in the aged population than in the population as a whole (in the absence of differences in fertility and immigration) the share of the population that is aged would vary substantially under the different assumptions. Under the low mortality assumption, in 2020, 18.3 percent of the population would be aged 65 and over; under the middle assumption, 17.3 percent; and under the high assumption, 16.5 percent.[23] By 2050 the gap would widen further; while the low mortality assumption would imply 24.1 percent of the total population would be aged, the high assumption would indicate only 19.8 percent.

### *2. Fertility*

The projected fertility levels can be summarized with a measure known as the total fertility rate, which approximates the number of children a woman would have in her lifetime at current birth rates.[24] A total fertility rate of 2.1 children per woman is the level at which a population just replaces itself (without either growing or declining) if that rate is sustained over a long period. The low fertility series of the census projections assumes that the total fertility rate will decline slightly from its current level of about 1.8 to a level of 1.6 in 2060; that decline would occur slowly over the entire 80-year period, as shown in table 2.4. The middle series assumes a more level rate increasing slightly in the next few decades but leveling out at 1.9 by 2050. The high fertility series assumes that fertility will rise to a peak in 2020 and decline slightly thereafter to a level of 2.3 by 2060.

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[23] These figures differ slightly from the shares of population that are elderly discussed earlier because these demonstrate the effects of varying the mortality assumptions alone, whereas the earlier figures represent a range derived by varying all assumptions simultaneously.

[24] For a given year the total fertility rate measures the number of children a hypothetical woman would bear in her lifetime if she were to have children at the same rate in each year of her life as women of different ages in that year.

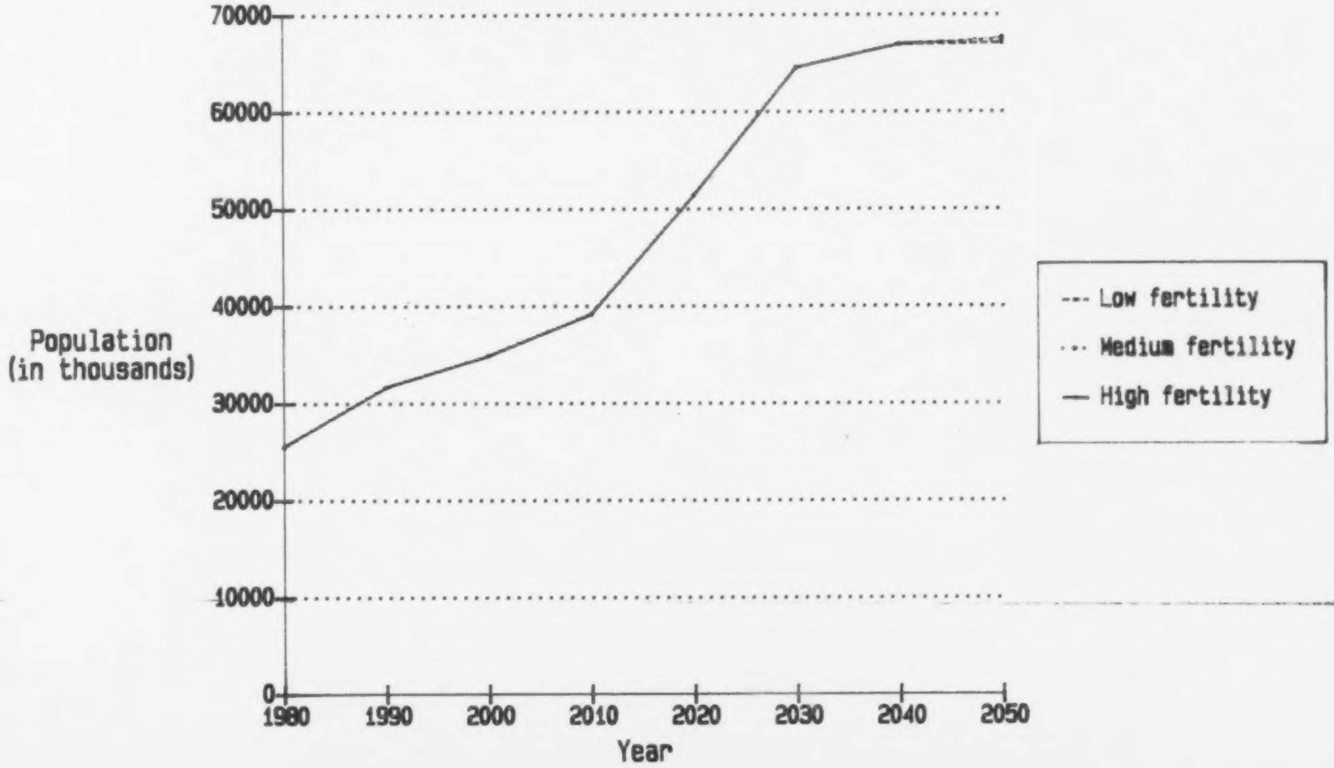
TABLE 2.4.—FERTILITY ASSUMPTIONS UNDER THREE PROJECTION SERIES U.S. BUREAU OF THE CENSUS PROJECTIONS 1980 TO 2060

| | Series | | |
|---|---|---|---|
| | Low | Middle | High |
| Year: | | | |
| 1980 | 1.83 | 1.83 | 1.83 |
| 1990 | 1.75 | 1.94 | 2.09 |
| 2000 | 1.69 | 1.96 | 2.24 |
| 2010 | 1.65 | 1.96 | 2.34 |
| 2020 | 1.64 | 1.94 | 2.35 |
| 2030 | 1.62 | 1.93 | 2.33 |
| 2040 | 1.61 | 1.91 | 2.32 |
| 2050 | 1.60 | 1.90 | 2.30 |
| 2060 | 1.60 | 1.90 | 2.30 |

Source: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25, No. 952. Table A-4.

Projected differences in fertility of the magnitude described here have almost no effect on the size of the projected aged population, as shown in figure 2.12. The group of persons who will be elderly even in 2050 have already been born, so there is no effect.

Figure2.12: Effects of Fertility Assumptions on Projections of Population Aged 65 and Over: 1980 - 2050



However, the fertility assumptions affect the size of the total population and consequently the share of the total population that would be aged. By 2020, the total population under the high fertility assumption would be 15 percent larger than that under the low assumption. Under the low assumption, in 2020, 18.6 percent of the population would be aged, compared to 16.1 percent under the high assumption. By 2050, when the total population would be more than 47 percent larger under the high assumption, the gap would widen; the low and high assumptions would imply 26.0 and 17.8 percent of the population to be aged, respectively.

### *3. Immigration*

The immigration assumptions do not vary over time; the series differ only in the annual level of future net immigration.[25] The low series assumes 250,000 net immigrants per year; the middle series, 450,000; and the high series, 750,000. Current levels of legal immigration are about 550,000 per year; these levels have fluctuated since the 1960s, from a range of under 300,000 in the late 1960s to around 600,000 in the early 1980s (when there were high numbers of refugees coming into the country from Cuba and Southeast Asia). The projected levels of emigration from the U.S. range from 36,000 (middle series) to 160,000 (both low and high series) per year. Although reliable records of emigration are not kept in this country, recent estimates indicate that the higher level may better reflect current trends.[26] These levels and the projections reflect legal immigration only; the number of undocumented aliens is not currently incorporated into population projections.

Immigration is a key factor in population projections. Without an assumed net immigration, the projected population would peak sometime in the third decade of the next century and decline thereafter (according to the middle fertility and mortality assumptions). Immigration would account for 36 percent of the growth from 1985 to 2020 under the middle assumptions on all three factors of growth. From 2020 to 2050, if there were no net immigration, the population would decline by 3 percent, but with a middle level of immigration, it would increase by more than 4 percent. Immigration in this period would account for all of the growth and would actually prevent absolute population decline.

Varying the immigration assumptions would have an effect on the size of the aged population in the future, as shown in figure 2.13. Under the high immigration assumption, there would be nearly 2 million more aged persons in 2020 than under the low assumption, a 4 percent difference. By 2050 this difference would increase to 11 percent, or 7 million aged persons.

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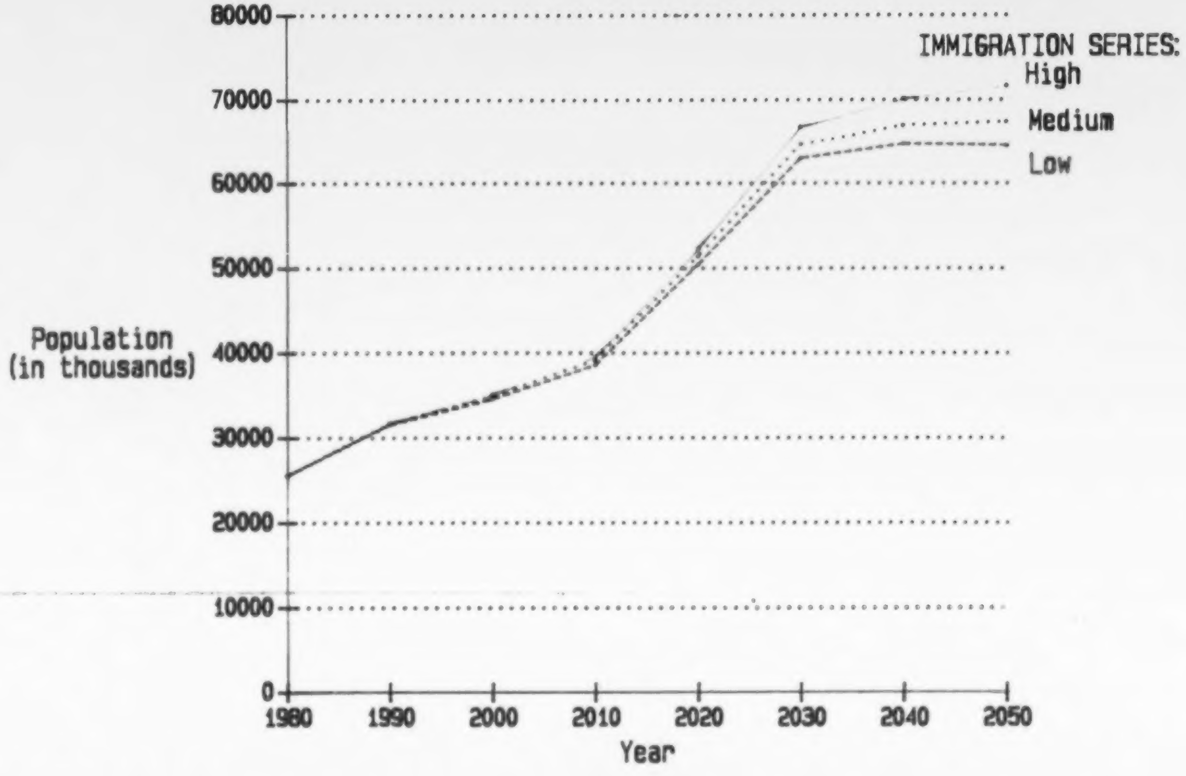
[25] Net immigration represents the difference between the total number of (legal) immigrants and the estimated number of emigrants.

[26] Private communication of the author with Gregory Spencer, U.S. Bureau of the Census, July 30, 1986.

Figure 2.13: Effects of Immigration Assumptions on Projections of Population Aged 65 and Over: 1980 - 2050



As is the case with the fertility assumptions, the immigration assumptions have a greater effect on the future size of the total population than on the aged population alone. Under the high immigration assumption, the total population in 2020 would be 9 percent larger than under the low assumption; this would increase to a 16 percent difference by 2050. The range of the share of the population that would be aged under the different immigration assumptions is considerably smaller than is the case with the fertility assumptions, because the fertility assumptions have a relatively greater impact on the size of the total population. Under the low immigration assumption, in 2020, 17.6 percent of the population would be aged, compared to 16.8 percent under the high assumption. By 2050, these figures would increase to 22.1 and 21.1 percent for the low and high assumptions, respectively.

## III. SOCIAL CHARACTERISTICS OF AGE GROUPS: THE CURRENT AND FUTURE AGED

We can already know some of the ways in which the aged of the future will differ from the aged of today. Certain social characteristics that are related to retirement behavior, health conditions, or financial well-being can be observed now in the baby boom cohorts. Such characteristics as educational attainment, numbers of immigrants, numbers of never-married persons, and the family relations of the baby boom will affect their needs in retirement, and merely the simple size and life expectancy of the cohort are, by themselves, insufficient information to identify what those future needs may be.

The following sections provide some information about some of the contrasting characteristics of the baby boom generation and today's aged. Projections have not been made on the basis of these characteristics, but some of the relationships understood today between them and different aspects of aging are pointed out.

Although information will yield insights, these characteristics do not predetermine how the members of the baby boom will act in retirement or what their needs will be. As a specific example, consider two current trends in retirement age: the average age of retirement of many specific types of people is declining, but people with higher levels of education may be retiring later than people with lower levels.

If both trends continue, they would work in opposite directions to determine the average ages of retirement of future retirees. The first trend would be that of people in each educational level tending to retire earlier than did people in earlier generations with the same educational level. The second trend would be the increasing levels of education in each younger age group. These persons might tend to retire later than their age peers with less education, so that the average age of retirement could decline slower than might otherwise be expected. The degree to which these two trends offset one another, along with other important factors related to social conditions and public policy, would determine the average retirement age for the population as a whole.

## A. EDUCATION

Since the members of each new generation in American society have gained more years of education, the future aged cohorts will be more educated than those of today. The differences in educational attainment of current and future elderly is striking; future generations of elderly will have substantially higher educational levels than past generations. Among people aged 75 and over in 1980, as Table 2.5 shows, fewer than one in ten persons attained a college education; over half had only an eighth grade education or less. The people who are now aged 25 to 34 will be turning 65 from 2010 through 2020; in contrast to the current elderly, nearly half of this cohort already has some college education (and this cohort has not yet completed its education). Just over 5 percent have attained only an elementary education or less.

TABLE 2.5.—PERCENT DISTRIBUTION OF YEARS OF SCHOOL COMPLETED BY DIFFERENT AGE GROUPS: 1980

| | Elementary | | | High school | | College | | |
|---|---|---|---|---|---|---|---|---|
| | 0 to 4 | 5 to 7 | 8 | 1 to 3 | 4 | 1 to 3 | 4 | 5 plus |
| Age: | | | | | | | | |
| 25 to 34 | 1.2 | 2.1 | 2.1 | 10.4 | 38.1 | 22.8 | 13.1 | 10.2 |
| 35 to 44 | 1.8 | 3.6 | 3.9 | 14.0 | 40.1 | 17.1 | 9.3 | 10.2 |
| 45 to 54 | 3.1 | 6.1 | 6.9 | 17.7 | 37.6 | 13.6 | 7.5 | 7.4 |
| 55 to 64 | 4.3 | 8.5 | 10.7 | 19.6 | 34.3 | 11.6 | 5.8 | 5.2 |
| 65 to 74 | 6.8 | 13.7 | 17.4 | 19.4 | 24.2 | 9.6 | 4.9 | 4.1 |
| 75 plus | 11.6 | 17.8 | 22.9 | 15.1 | 17.2 | 8.3 | 4.4 | 2.8 |

Source: U.S. Department of Commerce. Bureau of the Census. 1980 Census of Population. Detailed Population Characteristics. Part 1. United States Summary. PC80-1-D1-A. Washington, D.C., March 1984. Table 262.

Future differences in educational attainment may be associated with differences in the needs of the elderly. Currently, people with higher levels of education tend to have lower incidence of chronic illness and to have more personal resources to bring into their retirement years than people with less education. Older men who suffer from severe physical impairments are likely to have completed fewer years of schooling than their counterparts without such impairments.[27]

Evidence about the retirement behavior of people with higher education is somewhat contradictory. In general, people with higher levels of education tend to retire earlier than people with less education. For example, among men retiring between 1967 and 1976, only 31 percent with less than 12 years of education retired early (before age 65), in contrast to 52 percent of men with 13 or more years of education.[28] However, this association is most likely a result of the greater resources attained by people with higher education. If factors such as foregone earnings (for the year following retirement), liquid assets, Social Security payments, and pension eligibility are taken into account, people with higher levels of education are actually found to retire later.[29] These findings support a more intuitive expection that if two people had the same levels of assets, potential Social Security payments, and pension coverage, the one with more education would probably have a job that pays more and is otherwise more rewarding, and consequently that person could be expected to work longer. The earlier finding is likely a result of the high association between educational attainment and such factors as earnings, assets, and pension coverage; persons with greater accumulated resources at retirement are more likely to retire earlier, as is noted in the chapter on the retirement decision.

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[27] Chirikos, Thomas N. and Gilbert Nestel. Impairment and Labor Market Outcomes: A Cross-Sectional and Longitudinal Analysis. In Work and Retirement. Herbert S. Parnes, ed., Cambridge: MIT Press. 1981. p. 100.

[28] Parnes, Herbert S. and Gilbert Nestel. The Retirement Experience. In Work and Retirement. Herbert S. Parnes, ed. Cambridge: MIT Press. 1981. p. 164.

Because of the complex relationship between education and retirement age, it is difficult to speculate what effects the higher educational levels of the future elderly might have on the timing of their retirement. If the baby boom generation is able to translate its educational resources into income flows and personal assets then the better-educated baby boomers should retire earlier.

### B. IMMIGRATION

A relatively large share of the current elderly came to this country during the large waves of immigration before the mid-1920s. For some of these foreign born persons, life in the United States has been very good. For others, life has been somewhat more difficult, with the major advantages of immigration to this country sometimes being felt more in their children's generation. Foreign-born members of an age cohort may have special problems in their older years related to financial, health, and social differences from the native population of the same age.

Nearly 12 percent of the current population aged 65 and over is foreign-born, in contrast to just over 7 percent of the population aged 25 to 64. The future generations of elderly are likely to have smaller shares of foreign-born than is now the case. Table 2.6 shows the share foreign born in different age groups; among the youngest groups shown, there will be more immigration so that by the time these groups age, there will be a higher share, but since most immigration occurs at younger ages, it is likely that among these cohorts the Nation will not observe an aged population with as high a share of foreign born as is the case today.

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[29] Hausman, Jerry A. and David A. Wise. Social Security, Health Status, and Retirement. In Pensions, Labor, and Individual Choice. David A. Wise, ed. University of Chicago Press. Chicago. 1985. p. 172.

TABLE 2.6.—PERCENT OF THE POPULATION THAT IS FOREIGN BORN, BY AGE GROUP: 1980

| | Percent |
|---|---|
| Age: | |
| 25 to 34 | 7.1 |
| 35 to 44 | 8.2 |
| 45 to 54 | 7.3 |
| 55 to 64 | 6.3 |
| 65 and over | 11.7 |

Source: U.S. Bureau of the Census. 1980 Census of Population. Detailed Population Characteristics. Part 1. United States Summary. PC80-1-D1-A. Washington, DC, March, 1984. Table 255.

## C. MARITAL STATUS

Within the aged population, persons who have never married appear to show identifiable differences from persons who either are married now or who have been married at some time. For example, never-married men have lower income overall than widowed or divorced men while never-married women have higher income overall than widowed or divorced women.[30] Never-married persons also have more health problems; they are more susceptible to chronic disease and they have higher rates of mortality at relatively younger ages. In addition, their social contacts may be fewer; at a minimum, as a group, they have fewer offspring with whom to keep in touch and on whom they can rely in a crisis in their later years. Like other persons living alone, they find that their incomes must stretch further to cover fixed costs of living arrangements and other needs; they do not benefit from the economies of larger households.

The group of elderly who live alone are commonly considered to have special needs. The share of older persons who live with their children has decreased over the last twenty years.[31] Among unmarried elderly in particular, the share living with kin has dropped. In 1950, nearly 50 percent of unmarried men and 61 percent of unmarried women lived with some relatives. By 1977, these figures had declined to about 34 percent for men and 32 percent for women. These data include persons who have never married as well as those who have divorced, separated, or been widowed. If the preferences for independent living that these figures reflect continue, and the share of elderly persons who never married or who are divorced increases, then in the future, the share of elderly living alone could increase still more.

In its marital patterns, the baby boom may be more similar to current aged cohorts than it is to the intervening age groups. In the early decades of this century even up until World War II, both young men and women delayed marriage. Both as a result of these delays and because social custom did not appear to place as strong a value on ever marrying as was later the case, a fairly significant share of the population ended up never marrying at all. After the war, however, and throughout the years of the baby boom, people married at younger ages and a higher share of the total population did eventually marry.[32] Of cohorts that were in their 20s and 30s in the 1930s and 1940s, nearly 10 percent of the population never married at all. By the 1950s and 1960s, it is clear that significantly higher shares of young adults were married; these cohorts were marrying younger and more of them were to end up ever married. By 1980, however, a sharp reversal to the earlier trend could be observed; again, among both men and women, a much higher share of young persons were not yet married; the baby boom delayed marriage and a higher share of them are likely to never marry. It is likely, though not certain, that by the time the baby boom reaches retirement age, the share of the cohort never-married may be more similar to the 10 percent observed before the war than to the 5 percent the Nation has experienced in more recent years.

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[30] Grad, Susan. Income of the Population 55 and Over, 1984. U.S. Department of Health and Human Services, Social Security Administration. SSA Publication No. 13-11871. Washington, D.C. Dec. 1985. Table 13.

[31] Shanas, Ethel. Older People and Their Families: The New Pioneers. Journal of Marriage and the Family. Vol. 42. Feb. 1980. p. 12.

Another potentially important factor that may affect the marital status of future generations of elderly is the high divorce rate of recent years. In 1983, the divorce rate among married persons was more than twice what it had been in 1950, even with a slight decline from its peak in 1979. Although many of these divorced persons will remarry, some will not, and when they are older, they will have some of the same needs associated with living alone as will the never-married persons.

### D. POLITICAL PARTICIPATION

Two simple aspects of voting behavior are affected by the aging of the baby boom: (1) a larger share of older persons tend to vote than is the case with younger persons, and (2) persons with higher levels of education tend to vote in higher percentages than do persons with lower levels. As the baby boom ages, these two factors, in combination with its large share of the population, may lead to this group's forming a proportionately larger share of the electorate than would be expected simply on the basis of its numbers alone.

Figure 2.14 demonstrates the tendency for older voters to vote to a greater extent than younger voters; in Presidential elections since 1972, the highest rate of voting has been among persons 45 to 64. The next highest level of voting participation has shifted from being among those 35 to 44 in the earlier years shown to being those 65 and over since 1980. This shift may reflect both the higher levels of education among persons entering the latter age group in these years and lower levels of foreign born population among the same persons, in comparison to previous members of this age group.

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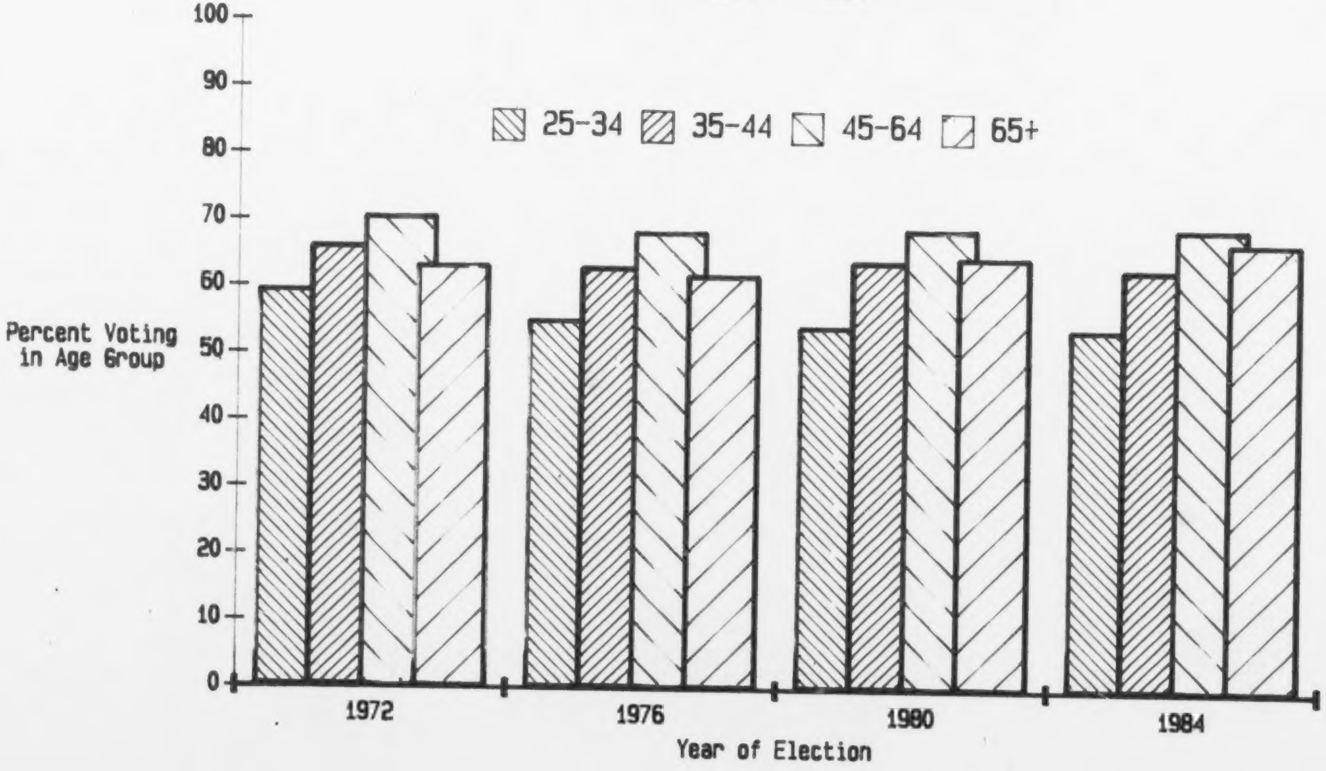
[32] Cherlin, Andrew. Marriage, Divorce, and Remarriage. Harvard University Press. Cambridge, MA. 1981. p 10–11.

Figure 2.14
Percent of the Population Voting in Selected Presidential Elections, by Age Group:
1972 - 1984



The educational aspect of voting participation may also mean that future older cohorts may vote to a greater extent than do the current elderly. In 1984, just over 79 percent of persons with four or more years of college voted in the Presidential election in comparison to 44 percent of persons with less than a high school education.[33] The higher educational attainment of the baby boom can be expected to affect voting behavior. In 1980 over 61 percent of the aged population had less than a high school education and 8 percent had at least a college education. In contrast, among persons aged 25 to 34, who will be 65 to 74 in 2020, a much smaller share had less than a high school education (under 16 percent) and a much larger share had at least a college education (over 23 percent).

### E. FAMILY RELATIONS

Because of the declining fertility patterns by the baby boom generation, when it retires, it will have fewer younger family members of familial support than its predecessors. Although such factors as the increasing mobility of American society or problems of communication and transportation have been cited as the source of caretaking problems for today's elderly, it may be that a "dearth of descendants" is the greater problem.[34] The problems stem not only from the share of childless persons but also from increasing numbers of families with only one or two children. In 1975, only about 80 percent of the elderly had living children. Of those with children, half had only one or two.[35] The total number of children born to future generations of elderly is likely to be even smaller. "Kin networks can offer fewer options and resources when there are fewer members of the younger generations. All things considered, an aging couple will fare better when several children can contribute to its support."[36]

Trends in the share of older men and women who live with relatives other than their spouse show a sharp decline over the last 35 years; in 1940, 30.2 percent of women and 15.0 percent of men lived with other relatives. By 1975, these figures had declined to 13.4 and 3.9 percent for women and men, respectively.[37] Although some of this decline might be attributable to demographic trends, there also appear to be strong preferences for independent living on the part of both the elderly and their adult offspring. The decline in shared living arrangements, however, does not reflect a similar decline in lack of familial support between households. There is evidence that older parents living alone frequently see or are in contact with the their children.[38]

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[33] U.S. Bureau of the Census. Statistical Abstract of the United States: 1986. Washington, D.C. 1985. Table 434.

[34] Treas, Judith. Family Support Systems for the Aged: Some Social and Demographic Considerations. The Gerontologist. Vol. 17, No. 6. 1977. p. 486–491.

[35] Shanas, Ethel. A National Survey of the Aged. Final Report to the Administration on Aging. Washington D.C. U.S. Department of Health, Education, and Welfare.

[36] Treas, Judith. Family Support Systems. p. 487.

[37] Mindel, Charles H. Multigenerational Family Households: Recent Trends and Implications for the Future. The Gerontologist. Vol. 19, No. 5. 1979.

[38] Shanas. Older People and Their Families. p. 12.

## F. TIME SPENT IN RETIREMENT

Since the time retirement age was "defined" through the Social Security Act and other retirement programs to be age 65, the life expectancy of Americans at birth as well as at age 65 has increased considerably. As a result, people now retiring at age 65 can expect to spend a longer period of time in retirement than was the case for persons who retired at the same age 50 years ago. What is not yet known is whether, just because people live longer, they will be healthy longer. If longer life is not associated with a similarly extended period of good health, it may be difficult for people to work longer.

The differences in the remaining lifetime of a retiree can be viewed in at least two ways, using the concept of an "equivalent retirement age" to relate changes in life expectancy to the age of retirement. First, at what age would an average person have to retire today to expect the same number of years in retirement as someone who retired at age 65 in 1940, when benefits were first paid under the Social Security system? Alternatively, the equivalent retirement age could be defined by relating the time spent in retirement to the time spent in the labor force. At what age would an average person have to retire today to expect to spend the same relative amount of time in retirement—in comparison to the time spent in the labor force—as a person who retired at age 65 in 1940?[39]

In 1985, a person retiring at age 71 years and one month could expect to live as long in retirement as a person retiring at age 65 in 1940. Figure 2.15 shows the projections of this equivalent retirement age concept through to 2060.[40] By 2020, if life expectancies at age 65 increase as projected, the age at which people could retire and expect the same time in retirement as persons retiring at age 65 in 1940 would be 74 years and 9 months, and by 2050 that would increase to 76 years and 7 months, more than a decade older than was the case in 1940.

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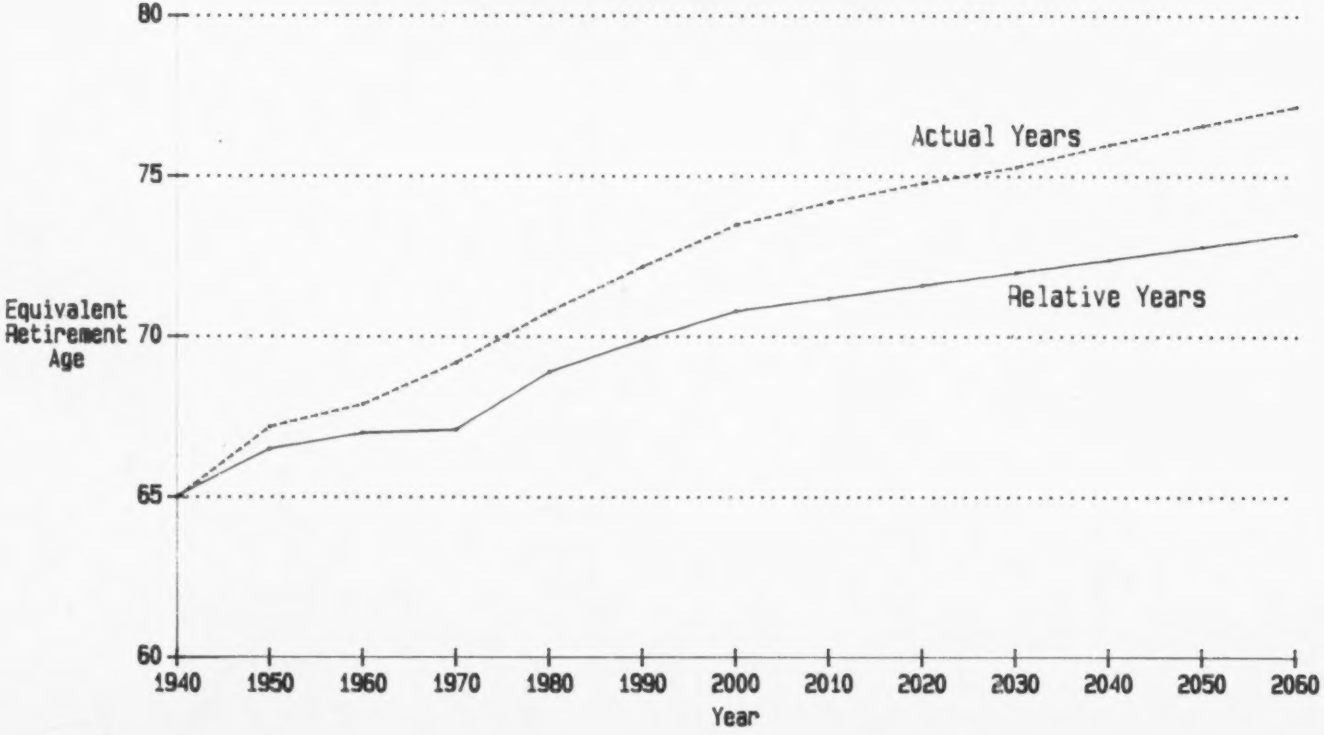
[39] Concepts developed in Bayo, Francisco R. and Joseph F. Faber. Equivalent Retirement Ages: 1940-2050. Actuarial Note. No. 105. U.S. Department of Health and Human Services. Social Security Administration. June 1981. SSA Pub. No. 11-11500. Figures used updated by Alice Wade (Actuary. Social Security Administration.) with life expectancies from the 1986 Treasuer's Report. Additional alternative concepts are developed in this paper.

[40] Using the life expectancies projected in Social Security Administration. Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. Washington, D.C., Mar. 31, 1986, p. 35.

Figure 2.15
Estimation and Projection of Equivalent
Retirement Ages: 1940 - 2060
(Social Security Administration Projections)



The other line in figure 2.15 shows the alternative, relative concept for measuring time spent in retirement. This line projects the retirement age that would hold constant the ratio of years lived in retirement to the years spent in the labor force. This concept of retirement leads to slightly lower equivalent retirement ages in the future. In 1985, a person retiring at age 69 years and 4 months would spend the same share of life in retirement compared to the labor force as a person retiring at age 65 in 1940. By 2020, that would increase to 71 years and 7 months, and by 2050, to 72 years and 10 months.

## IV. Labor Force Participation and the Baby Boom

In the decades since World War II, the nature of the labor force has changed dramatically. Unfortunately, it is difficult to track these changes to determine whether they stem from long-term trends or whether they have been uniquely a characteristic of the post-war western world. Detailed data on labor force participation of different populations groups before 1947 are not available, although limited but not comparable data from decennial censuses are available into the last century.

### A. RECENT TRENDS IN LABOR FORCE PARTICIPATION

### *1. Rates for Men and Women*

In the last 40 years a shift has occurred in the rates of labor force participation of men and women. Since 1948, male and female labor force participation rates [41] have moved in opposite directions: a smaller share of men aged 16 and over were in the labor force in 1984 than in 1947, while a substantially larger share of women in the same age group were in the labor force. As figure 2.16 shows, the share of the total male noninstitutional population aged 16 and over that was in the labor force declined fairly steadily from the late 1940s through 1984 (from 87 to 77 percent). At the same time, women aged 16 and over increased their level of participation more rapidly than men's declined, from about 32 percent in the late 1940s to 54 percent in 1984.

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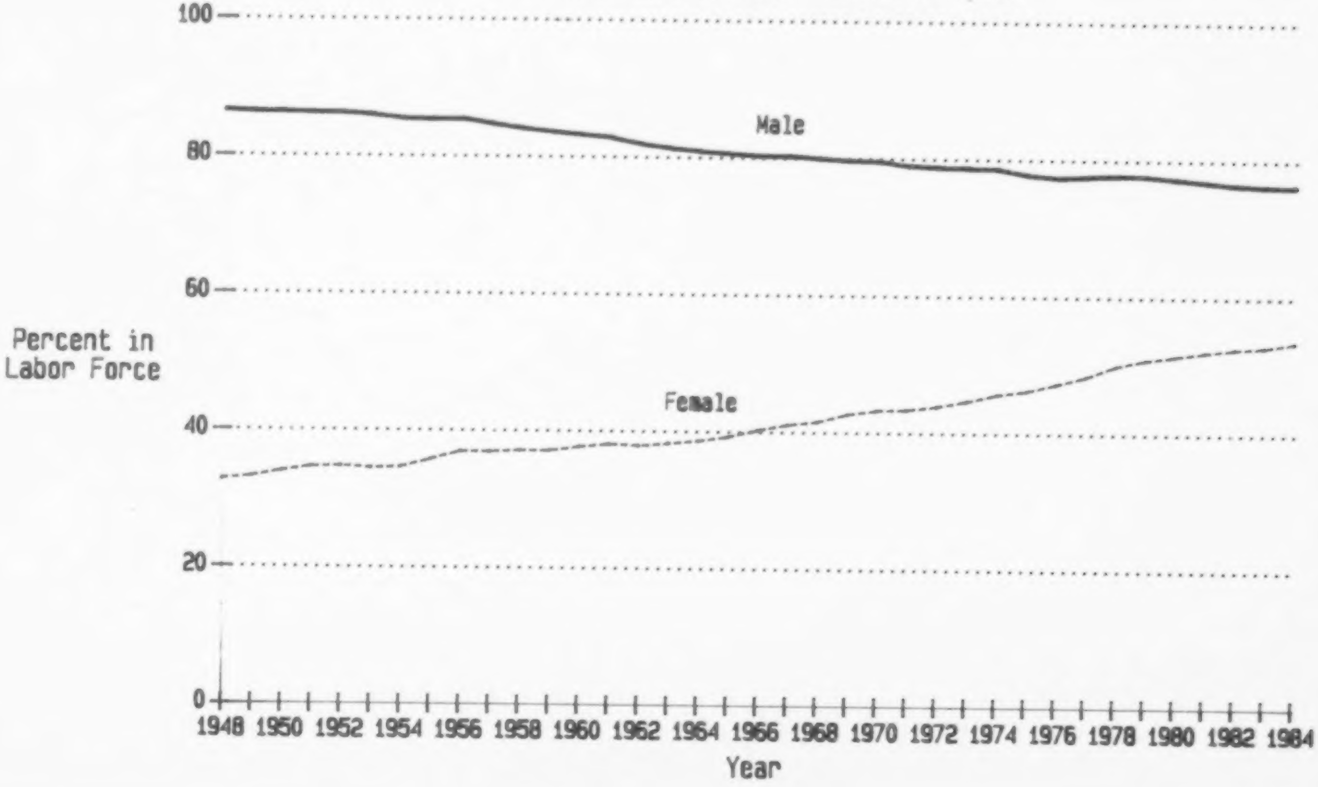
[41] The Bureau of Labor Statistics defines persons aged 16 or older as in the labor force if they are either employed or unemployed. Persons are defined as unemployed if they are not working but are making active efforts to find a job and are available for work. Persons on layoff or waiting to report to a job are also classified as unemployed. The Bureau also distinguishes between the civilian labor force and the total labor force; the latter includes members of the Armed Forces stationed in the United States.

The civilian labor force participation rate is defined as the percent of persons in the civilian, noninstitutionalized population who are in the civilian labor force.

Figure 2.16
Labor Force Participation Rates
for Men and Women: 1948 to 1984



In terms of the overall level of labor force participation in the population, the increased participation by women more than offset the declining rates of men. If both men and women had participated in the labor force at the same rate as they had in 1950, in 1983 there would have been approximately 100 million persons in the civilian labor force. Instead, the labor force was 12 percent larger, with about 112 million persons.[42] The overall rate of labor force participation, for men and women aged 16 and over combined, therefore, increased from about 59 percent in 1950 to 64 percent in 1983.

The increase in female labor force participation has been particularly rapid in the more recent part of this period. From 1948 to 1975, the rate increased an average of 0.5 percentage points per year; from 1975 to 1983, though, it increased an average of 0.8 percentage points per year, with the most rapid increase occurring from 1975 to 1980.[43]

The trends in the labor force participation of women have been strengthened by increasing levels of educational attainment.[44] At each education level, relatively more women are now in the labor force than was previously the case. Between 1970 and 1984, the labor force participation rate of women in every education category and at all ages under age 55 increased, as shown in figure 2.17. This figure also shows that the labor force participation rate of women is highly correlated with their educational level; women with four or more years of college are generally about twice as likely to be in the labor force as women with 8 or fewer years of elementary school.

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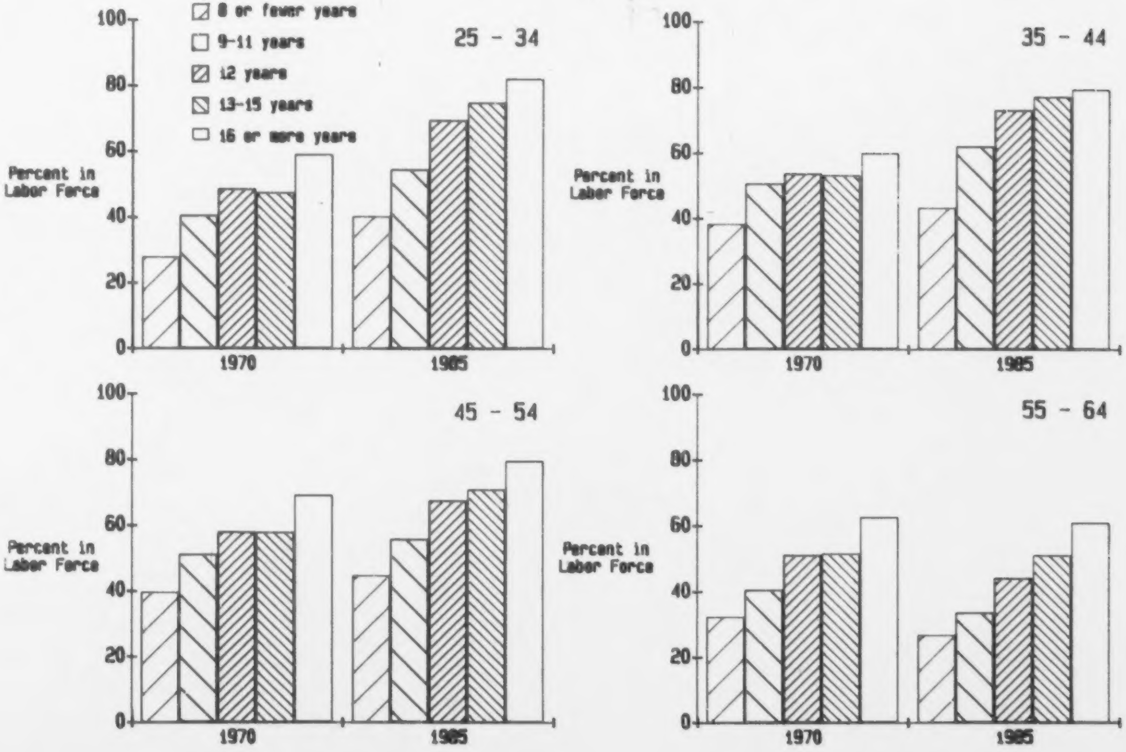
[42] Based on data from U.S. Department of Labor. Handbook of Labor Statistics. Bulletin 2217. Washington, D.C. June 1985. Tables 3, 4, and 5. Estimation procedure controls for age and sex composition of the labor force.

[43] Based on data in U.S. Department of Labor. Bureau of Labor Statistics. Handbook of Labor Statistics. Bulletin 2217. Washington, D.C. June 1985.

[44] Kreps, Juanita and Robert Clark. Sex, Age, and Work: The Changing Composition of the Labor Force. Johns Hopkins University Press. Baltimore, Md. 1975. p. 20.

Figure 2.17: Female Labor Force Participation Rates by Age and Educational Attainment 1970 and 1985



At the same time that labor force participation was increasing at all educational levels, the educational attainment of women was increasing, as noted above. In 1985, the share of women aged 25 and over with at least a college education was nearly twice as high as it had been in 1970 (16.0 and 8.2 percent, respectively). In the same time period, the share of women with no secondary schooling similarly declined, from 26.6 to 13.6 percent. Thus, there are two aspects of increasing labor force participation among women; one is the increasing tendency for all women to participate in the labor force and the second is the increasing prevalence of that group of women with the highest labor force participation—those with more education. If the trend to higher levels of educational attainment continues, regardless of the future path of the general tendency toward increasing female labor force participation, labor force participation rates should continue to rise as a result of the changing educational composition of the population.

The changing labor force participation rates of women will play an important role in determining the size of the labor force in the near- and long-term futures. Future patterns of behavior will have important effects on determining the impact of the retirement of the baby boom. If women's labor force participation rates continue to rise, then the size of the labor force relative to the size of the aged population will be greater than we may otherwise anticipate. If women today participated in the labor force at the same rate as men, the total labor force would be twenty percent larger than it now is. Generally, economic forecasters do not anticipate women's rates rising to the levels of men's because of competing societal demands on women's time, primarily in childrearing and homemaking. Nevertheless, a comparison of such a hypothetical situation to current rates indicates the potential impact of long-term increases in female labor force participation. In contrast, if women's levels of participation were today the same as in the late 1940s, the labor force today would be 17 percent smaller than it actually is.[45]

### 2. *Differences Among Age Groups*

The changes in labor force participation have not been the same at all ages, and even these differences have varied by sex. Figure 2.18 shows that the changes in the rates for men have been modest at all ages except the youngest and oldest. At all ages, the rates declined; however, in 1984 adolescent men participated in the labor force at a considerably lower rate than they had in 1950. Above age 55, the labor force participation rate declined even more; the rate for men aged 55 to 64 was over 20 percent lower in 1984 than it had been in 1950, and the rate for men age 65 and over declined by nearly 65 percent.

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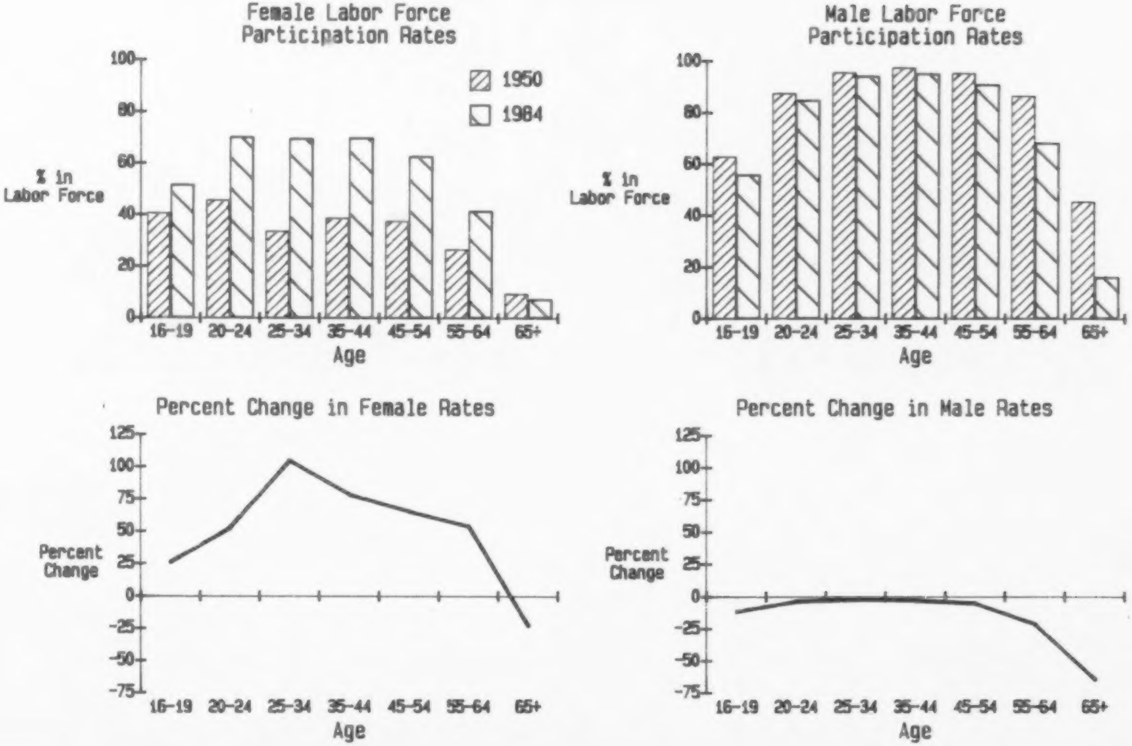
[45] Comparisons based on data in U.S. Bureau of Labor Statistics. Handbook.

Figure 2.18
Changes in Labor Force Participation Rates
by Age and Sex: 1950 to 1984



Although these decreases for men were large, the differences for women in particular age groups have been considerably larger and in the opposite direction. The smallest increase in female labor force participation was among adolescents. In the major childrearing years, ages 25 to 44, the increases have been sharper than in any other age group; in this 24-year period, the rate increased over 105 percent among women 25 to 34 and nearly 80 percent among those 35 to 44. The only group in which the rate declined was among women 65 and over, whose 1984 participation rate was nearly 23 percent lower than it had been in 1950.

It is the women of the baby boom who are demonstrating the very high female labor force participation rates in 1984; in comparison to previous generations, they show the sharpest differences of any of the age groups. To the extent that these women continue to participate at these high rates, they will carry with them into retirement whatever work-related advantages they have accrued in their work life. This will be a difference from preceding cohorts; earlier cohorts of women have not participated in the labor force over their lifetimes to nearly the same extent. The degree of difference will depend on the continuation of the recent trends in increasing rates of labor force participation over their lifetimes as well as on their coverage under pension plans and other work-related entitlements that may continue into retirement.

There is some evidence that women are not covered by pensions to the same extent as men of the same age. The lower coverage results from two factors: (1) lower coverage among full-time female employees and (2) a smaller share of full-time employees among women than among men in the labor force. Among full-time employees in 1983, compared to 51 percent of the men, 41 percent of the women participated in a pension plan. One reason for this differential is that male workers tend to be older and to have longer tenure than female workers, both factors associated with higher levels of pension coverage.[46] Another reason is that fewer women in the labor force are employed full time; while over 86 percent of the male labor force was employed full time in 1983, less than 74 percent of the female labor force was.[47]

The labor force participation rates among women, though increasing rapidly, still are substantially lower than those among men. Among future cohorts of women in their forties and fifties in particular, participation rates may continue to rise. This could result from a combination of two patterns of work over women's lifetimes. The first is the historical pattern of women's entering the labor force after their children are older. A second force for a future increase in rates at those ages, though, could be the continuation of participation by women who started in the labor force at an earlier age, perhaps even while raising a family, and who simply continue to work. These double forces for increased labor force participation will play out as the baby boom passes through these ages and into its retirement ages, if later cohorts of women follow the same work patterns.

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[46] Beller, Daniel J. Coverage and Vesting Status in Private Pension Plans, 1972-1983; in The Handbook of Pension Statistics: 1985. Ippolito, Richard A. and Walter W. Kolodrubetz, eds. Commerce Clearing House, Inc., Chicago. Jan. 1986. p. 87.

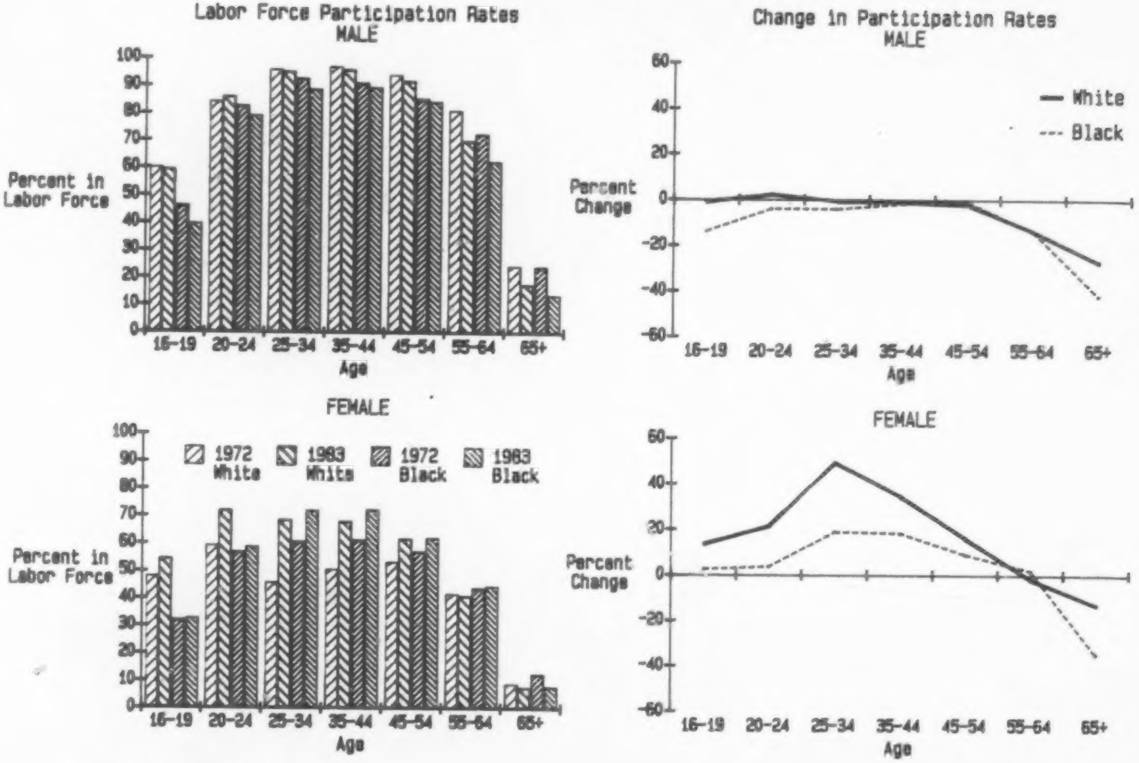
[47] Based on data in U.S. Bureau of the Census. Statistical Abstract of the United States: 1986. 106th Edition. Tables 660 and 665.

### *3. Rates for Blacks and Whites*

Labor force participation rates have not changed to the same extent among both the black and white populations; particularly among women, there have been notable differences. Comparable data for the race groups extend back only to 1972, but even if the 11 years from then to 1983, differences are apparent.

Among men, except at the very youngest and oldest ages, the differences in rates of change in labor force participation between blacks and whites are small, as figure 2.19 shows. Among adolescent black men, though, the rate has been declining more rapidly than among adolescent white men; in the latter group, the rate has hardly declined while among black adolescents it dropped nearly 14 percent from 1972 to 1983. In the intervening ages, until age 65 and over, the decline in labor force participation has been close among blacks and whites. But among older men, the black rate has declined by 42 percent, in comparison to a decline of about 28 percent among whites.

Figure 2.19
Changes in Labor Force Participation Rates
Among Men and Women by Race and Age
1972 to 1983



The levels of participation among black men are somewhat lower than among whites, as the figure also shows. This is particularly the case among adolescent men. Among men in the prime working years, from age 20 through 64, black rates in 1983 were from about 7 to 10 percent lower than white rates. After age 65, the black rates are still lower, but this is on a small base of participation for both blacks and whites.

Among women, the relationship between black and white rates of labor force participation is just the opposite, except among women under age 25, also shown in figure 12. From age 25 on, through the retirement years, black women are about 5 to 9 percent more likely to be in the labor force than are white women, at each age.

The rates among white women, however, have been increasing more rapidly than those among blacks. A larger relative share of the recent increases in female labor force participation has been among white women, and their participation rates have begun to approach those of black women. In this period, the rate among white women aged 25 to 34 increased nearly 50 percent while among blacks, that figure was under 20 percent. The major exception to this pattern is among women 65 and over; in both race groups, the rate declined, but among blacks it declined considerably more (nearly 35 percent) than among whites (just over 13 percent). As of 1983, about the same small share of black and white women over age 65 were in the labor force.

## B. PROJECTED LABOR FORCE PARTICIPATION

There are two major sets of national projections of labor force participation, one produced by the Bureau of Labor Statistics (BLS) for the years through 1995 and the other by the Social Security Administration (SSA) for the years through 2060. Neither set of projections assumes continued rapid changes in labor force participation rates, although the SSA projections assume lower future increases in female labor force participation than do the BLS projections. The projections are particularly useful for identifying the effects of future shifts in the age structure on the size and characteristics of the labor force.

### *1. Projections by Sex and Age*

The Bureau of Labor Statistics projections[48] assume continued increases in the participation rates among women in the prime working years, from 24 to 54; from a rate of 68.2 percent in 1984, they assume the rate will increase to 78.1 in 1995. This is not so rapid as the increases from 1950 to 1984, but it does imply an increase of 0.9 percentage points per year. The rates for women 16 to 24 would increase only modestly, from 62.8 in 1984 to 65.3 in 1995. At ages 55 and over, these projections would imply a decrease in labor force participation from 22.2 percent to 19.1 percent. Overall these figures imply an increase of about 0.6 percentage points per year for women in this period.

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[48] Data for the following discussion appear in U.S. Bureau of Labor Statistics. Employment Projections for 1995: Data and Methods. Bulletin 2253. Washington, D.C., Apr. 1986. Table B-1.

These projections assume that the rate among men would continue to decline, but at a more modest rate than over the past 34 years. Whereas the rate among men 16 to 24 is assumed to increase slightly, that among men 25 to 54 is assumed to decline very slightly. The most substantial shift would occur among men 55 and over, for whom the rate would decline from 41.8 to 33.1 percent. On balance, the projections for men and women would imply a slight increase in the overall labor force participation rate for persons 16 and over, from 64.4 to 66.6 percent in 1995.

The effects of these different trends for men and women of different ages would be a total civilian labor force of 129 million persons, 14 percent larger in 1995 than in 1984, distributed differently among age groups and between the sexes. Because in the next decade the size of the female labor force is projected to grow faster than the overall labor force, women would form a larger share of the labor force in the future. Whereas in 1984, they were just under 44 percent of the labor force, by 1995 under these projections, they would be more than 46 percent. In the near future, nearly 65 percent of the growth of the labor force would be accounted for by women; this represents an increase over more recent years when young men of the baby boom have been entering the labor force in large numbers. This would actually represent a return to patterns of the 1950s when increases in the female labor force also accounted for this higher share of the growth.[49]

The projected shifts in the age distribution of the labor force are even sharper. At 20 million persons, the entry age labor force (ages 16 to 24) would be 16 percent smaller in 1995 than in 1984. As the baby boom fully enters the age groups with the highest labor force participation, the number of persons in the labor force in prime working years, ages 25 to 54, would increase by 28 percent to more than 95 million. Although the size of the older population will increase, because continued declines in the labor force participation rates among older persons are assumed, the size of the labor force 55 and over would decline by 11 percent. The combined result of these shifts in the age structure of the labor force would be that persons 25 to 54 would account for a much larger share of the total labor force in 1995 than in 1984; this age group would increase from nearly 66 to more than 74 percent of the labor force.

These trends indicate that the labor force in the 1990s will be more experienced than in recent years when the baby boom has been entering the labor force. Again, this circumstance is likely to combine with the increases in educational attainment discussed earlier, to produce a more experienced, more highly educated labor force in the near future.

### *2. Projections by Race*

These projections also include assumptions about future trends in labor force projections by race. The rate for white men and women would move in the same direction as has been recently observed. The projected rate for white men would decline from 77.1 to 75.8 percent, and that for white women would increase from 53.3 to

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[49] Fullerton, Howard N. and John Tschetter. The 1995 Labor Force: A Second Look. Monthly Labor Review. Nov. 1983. p. 6.

58.4 percent. Again, these projected changes are not at as high a rate as recent trends. Among black men, the rate is projected to remain the same; that would not reflect the long term trend since 1972, for in that period the rate among black men increased slightly. However, it would reflect the shorter term trend since 1978; in this period the rate for black men has been stable. The projections reflect a trend for black women similar to that for white women, of somewhat slower increases during this period.

Despite the somewhat slower rates of increase in the participation rates among blacks, because of the younger age structure of this population, the size of the black labor force would grow considerably faster than the total labor force over the next decade. Although blacks currently account for about 11 percent of the civilian noninstitutional population, they would account for nearly 18 percent of the growth of the labor force between 1984 and 1995.

### *3. Sensitivity of the Projections*

The Bureau of Labor Statistics has conducted some sensitivity analysis of their labor force projections.[50] Two kinds of factors must be examined in such an analysis, for both demographic and economic assumptions are included in the projection models. The demographic assumptions regarding the rates of change in labor force participation in different groups and, to a much lesser extent future growth of the total population, have a large effect on the projected size of the labor force. If the rate of increase in female labor force participation continued to accelerate rather than to slow, the labor force could be more than 7 percent larger, representing nearly 10 million more persons. An alternative assumption about even slower growth in the female participation rate would imply over 6 million fewer persons in the labor force in 1995, or about 5 percent less.

Economic alternatives apprear to have substantially less effect on the projected size of the labor force than do demographic assumptions. Analysis of two types of economic trends was undertaken: (1) the details of labor force participation rates for age, sex, and marital status groups and their relationship to real earnings and unemployment rates, and (2) a macro labor force model relating labor force participation of all workers to trends in unemployment, real wages, labor productivity, and other trends. The ranges between high and low projections series reflecting these varying assumptions led to much smaller changes in projected labor force size, ranging from under 1.0 million to 2.8 million difference between high and low series. Relative to the demographic assumptions, then, the economic assumptions do not appear to have a very large effect on the range of the projected labor force.

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[50] For a more complete discussion of the sensitivity of the projections see Fullerton and Tschetter. 1995 Labor Force.

# APPENDIX: SUPPORT TABLES FOR FIGURES

## SUPPORT TABLE FOR FIGURE 2.1.—POPULATION AGED 65 AND OVER, 85 AND OVER, AND TOTAL POPULATION: ACTUAL POPULATION 1900–80; PROJECTED POPULATION 1990–2060

[Bureau of the Census projections—Middle series]

| Year | Total population | Population 65 and over | Population 85 and over |
|---|---|---|---|
| Actual: | | | |
| 1900 | 75,995 | 3,084 | 123 |
| 1910 | 91,972 | 3,949 | 167 |
| 1920 | 105,711 | 4,933 | 210 |
| 1930 | 122,775 | 6,634 | 272 |
| 1940 | 131,669 | 9,018 | 365 |
| 1950 | 151,326 | 12,270 | 577 |
| 1960 | 179,323 | 16,559 | 929 |
| 1970 | 203,302 | 19,980 | 1,409 |
| 1980 | 226,546 | 25,545 | 2,240 |
| Projected: | | | |
| 1990 | 249,657 | 31,697 | 3,313 |
| 2000 | 267,955 | 34,921 | 4,926 |
| 2010 | 283,238 | 39,195 | 6,551 |
| 2020 | 296,597 | 51,422 | 7,081 |
| 2030 | 304,807 | 64,581 | 8,612 |
| 2040 | 308,559 | 66,988 | 12,834 |
| 2050 | 309,488 | 67,411 | 16,034 |
| 2060 | 309,652 | 70,081 | 15,387 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Census of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports, Series P-25. No. 952. Washington, DC., May 1984. Table 6.

## SUPPORT TABLE FOR FIGURE 2.2.—PERCENT OF THE TOTAL POPULATION THAT IS AGED 65 AND OVER OR 85 AND OVER: ACTUAL POPULATION 1900–80; PROJECTED POPULATION 1990–2060

[Bureau of the Census projections—Middle series]

| Year | 65 and over | 85 and over |
|---|---|---|
| Actual: | | |
| 1900 | 4.06 | 0.16 |
| 1910 | 4.29 | .18 |
| 1920 | 4.67 | .20 |
| 1930 | 5.40 | .22 |
| 1940 | 6.85 | .28 |
| 1950 | 8.11 | .38 |
| 1960 | 9.23 | .52 |
| 1970 | 9.83 | .69 |
| 1980 | 11.28 | .99 |
| Projected: | | |
| 1990 | 12.70 | 1.33 |
| 2000 | 13.03 | 1.84 |
| 2010 | 13.84 | 2.31 |
| 2020 | 17.34 | 2.39 |
| 2030 | 21.19 | 2.83 |
| 2040 | 21.71 | 4.16 |

## SUPPORT TABLE FOR FIGURE 2.2.—PERCENT OF THE TOTAL POPULATION THAT IS AGED 65 AND OVER OR 85 AND OVER: ACTUAL POPULATION 1900–80; PROJECTED POPULATION 1990–2060—Continued

[Bureau of the Census projections—Middle series]

| Year | 65 and over | 85 and over |
|---|---|---|
| 2050 | 21.78 | 5.18 |
| 2060 | 22.63 | 4.97 |

Source: Based on data from U.S. Bureau of the Census. Decennial Censuses of Population, 1900 to 1980. And U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC., May 1984. Table 6. (1990–2060).

## SUPPORT TABLE FOR FIGURE 2.4.—ACTUAL AND PROJECTED LIFE EXPECTANCIES AT BIRTH AND AT AGE 65 FOR MEN AND WOMEN: 1900–2060

[Bureau of the Census projections]

| Year | Life expectancy at birth | | Life expectancy at age 65 | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| Actual: | | | | |
| 1900 | 46.3 | 48.3 | 11.3 | 12.0 |
| 1910 | 48.4 | 51.8 | 11.4 | 12.1 |
| 1920 | 53.6 | 54.6 | 11.8 | 12.3 |
| 1930 | 58.1 | 61.6 | 11.8 | 12.9 |
| 1940 | 60.8 | 65.2 | 11.9 | 13.4 |
| 1950 | 65.6 | 71.1 | 12.8 | 15.1 |
| 1960 | 66.6 | 73.1 | 12.9 | 15.9 |
| 1970 | 67.1 | 74.7 | 13.1 | 17.1 |
| 1980 | 70.0 | 77.5 | 14.1 | 18.3 |
| Projected: | | | | |
| 1990 | 71.6 | 79.2 | 15.0 | 19.5 |
| 2000 | 72.9 | 80.5 | 15.7 | 20.5 |
| 2010 | 73.8 | 81.5 | 16.1 | 21.2 |
| 2020 | 74.2 | 82.0 | 16.5 | 21.7 |
| 2030 | 74.6 | 82.5 | 16.8 | 22.1 |
| 2040 | 75.0 | 83.1 | 17.1 | 22.6 |
| 2050 | 75.5 | 83.6 | 17.4 | 23.1 |
| 2060 | 75.9 | 84.1 | 17.8 | 23.6 |

Source: 1900 to 1890: At Birth: National Center for Health Statistics. Vital Statistics of the United States, 19809, Vol II—Mortality. Hyattsville, MD. 1985. At Age 65: Social Security Administration. Social Security Area Population Projections, 1985. Actuarial Study No. 95. SSA Pub. No. 11-11542. October 1985. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC. May 1984. Table B–5.

## SUPPORT TABLE FOR FIGURE 2.5.—ACTUAL AND PROJECTED POPULATION AGED 65 AND OVER: 1980–2060

[Bureau of the Census projections; in thousands]

| Year | Low series | Medium series | High series |
|---|---|---|---|
| Actual: 1980 | | 25,545 | |
| Projected: | | | |
| 1990 | 31,352 | 31,697 | 31,990 |
| 2000 | 33,621 | 34,921 | 36,246 |
| 2010 | 36,548 | 39,195 | 42,067 |
| 2020 | 47,135 | 51,422 | 56,332 |
| 2030 | 58,066 | 4,581 | 72,588 |
| 2040 | 58,116 | 66,988 | 78,558 |
| 2050 | 56,337 | 67,411 | 82,745 |
| 2060 | 54,871 | 70,081 | 90,808 |

Source: 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25. No. 952. Washington, DC. May 1984. Table 6.

## SUPPORT TABLE FOR FIGURE 2.6.—ACTUAL AND PROJECTED POPULATION AGED 85 AND OVER: 1980–2060

[Bureau of the Census projections; in thousands]

| Year | Low series | Medium series | High series |
|---|---|---|---|
| Actual: 1980 | | 2,240 | |
| Projected: | | | |
| 1990 | 3,201 | 3,313 | 3,380 |
| 2000 | 4,444 | 4,926 | 5,386 |
| 2010 | 5,486 | 6,551 | 7,756 |
| 2020 | 5,532 | 7,081 | 9,016 |
| 2030 | 6,490 | 8,612 | 11,418 |
| 2040 | 9,391 | 12,834 | 17,568 |
| 2050 | 11,088 | 16,034 | 23,416 |
| 2060 | 9,865 | 15,387 | 24,459 |

Source: 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25. No. 952. Washington, DC. May 1984. Table 6.

## SUPPORT TABLE FOR FIGURE 2.7.—PERCENT OF ACTUAL AND PROJECTED ELDERLY POPULATION THAT IS AGED 85 AND OVER: ALTERNATIVE SERIES 1900–2060

[Bureau of the Census projections]

| Year | Percent of the population aged 65 and over that is aged 85 and over | | |
|---|---|---|---|
| | Low series | Medium series | High series |
| Actual: 1980 | | 8.77 | |
| Projected: | | | |
| 1990 | 10.45 | 10.21 | 10.57 |
| 2000 | 14.11 | 13.22 | 14.86 |
| 2010 | 16.71 | 15.01 | 18.44 |
| 2020 | 13.77 | 11.74 | 16.01 |
| 2030 | 13.34 | 11.17 | 15.73 |
| 2040 | 19.16 | 16.16 | 22.36 |
| 2050 | 23.79 | 19.68 | 28.31 |
| 2060 | 21.96 | 17.98 | 26.93 |

Source: Based on data from U.S. Bureau of the Census. Decennial Censuses of Population, 1900 to 1980. And U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC. May 1984. (1990–2060). Table 6.

## SUPPORT TABLE FOR FIGURE 2.8.—PERCENT OF TOTAL POPULATION THAT IS AGED 65 AND OVER OR 85 AND OVER: ALTERNATIVE PROJECTION SERIES, 1980–2060

[Bureau of the Census projections]

| Year | 65 and over | | | 85 and over | | |
|---|---|---|---|---|---|---|
| | Low | Middle | High | Low | Middle | High |
| Actual: 1980 | 11.28 | 11.28 | 11.28 | 0.99 | 0.99 | 0.99 |
| Projected: | | | | | | |
| 1990 | 12.76 | 12.70 | 12.59 | 1.30 | 1.33 | 1.33 |
| 2000 | 13.13 | 13.03 | 12.87 | 1.74 | 1.84 | 1.91 |
| 2010 | 13.98 | 13.84 | 13.57 | 2.10 | 2.31 | 2.50 |
| 2020 | 17.94 | 17.34 | 16.53 | 2.11 | 2.39 | 2.65 |
| 2030 | 22.56 | 21.19 | 19.63 | 2.52 | 2.83 | 3.09 |
| 2040 | 23.58 | 21.71 | 19.71 | 3.81 | 4.16 | 4.41 |
| 2050 | 24.26 | 21.78 | 19.33 | 4.77 | 5.18 | 5.47 |
| 2060 | 25.20 | 22.63 | 19.78 | 4.53 | 4.97 | 5.33 |

Source: Based on data from U.S. Bureau of the Census. Decennial Censuses of Population, 1900 to 1980. And U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sec, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC. May 1984. (1990–2060). Table 6.

## SUPPORT TABLE FOR FIGURE 2.9.—ACTUAL AND PROJECTED LIFE EXPECTANCY AT BIRTH 1900–2060

[Bureau of the Census Projections]

| Year | Male | Female |
|---|---|---|
| Actual: | | |
| 1900 | 46.3 | 48.3 |
| 1910 | 48.4 | 51.8 |
| 1920 | 53.6 | 54.6 |
| 1930 | 58.1 | 61.6 |
| 1940 | 60.8 | 65.2 |
| 1950 | 65.6 | 71.1 |
| 1960 | 66.6 | 73.1 |
| 1970 | 67.1 | 74.7 |
| 1980 | 70.0 | 77.5 |

| Year | Low | | Middle | | High | |
|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female |
| Projected, by mortality series: | | | | | | |
| 1990 | 72.2 | 79.8 | 71.6 | 79.2 | 71.1 | 78.6 |
| 2000 | 74.3 | 82.0 | 72.9 | 80.5 | 71.7 | 79.2 |
| 2010 | 75.7 | 83.7 | 73.8 | 81.5 | 72.1 | 29.6 |
| 2020 | 76.4 | 84.7 | 74.2 | 82.0 | 72.3 | 79.9 |
| 2030 | 77.1 | 85.7 | 74.6 | 82.5 | 72.5 | 80.1 |
| 2040 | 77.8 | 86.7 | 75.0 | 83.1 | 72.7 | 80.3 |
| 2050 | 78.6 | 87.8 | 75.5 | 83.6 | 72.9 | 80.5 |
| 2060 | 79.3 | 88.8 | 75.9 | 84.3 | 73.1 | 80.8 |

Source: 1900 to 1980: At Birth: National Center for Health Statistics. Vital Statistics of the United States, 1980, vol. II—Mortality. Hyattsville, MD 1985. Table 6–5. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC. May 1984. Table B–5.

## SUPPORT TABLE FOR FIGURE 2.10.—ACTUAL AND PROJECTED LIFE EXPECTANCY AT AGE 65 1990–2060

[Bureau of the Census projections]

| Year | Male | Female |
|---|---|---|
| Actual: | | |
| 1900 | 11.3 | 12.0 |
| 1910 | 11.4 | 12.1 |
| 1920 | 11.8 | 12.3 |
| 1930 | 11.4 | 12.9 |
| 1940 | 11.9 | 13.4 |
| 1950 | 12.8 | 15.1 |
| 1960 | 12.9 | 15.9 |
| 1970 | 13.1 | 17.1 |
| 1980 | 14.1 | 18.3 |

| Year | Low | | Middle | | High | |
|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female |
| Projected, by mortality series: | | | | | | |
| 1990 | 15.3 | 20.0 | 15.0 | 19.5 | 14.7 | 19.1 |
| 2000 | 16.4 | 21.7 | 15.7 | 20.5 | 15.0 | 19.6 |
| 2010 | 17.2 | 22.9 | 16.1 | 21.2 | 15.3 | 19.9 |
| 2020 | 17.8 | 23.8 | 16.5 | 21.7 | 15.4 | 20.1 |
| 2030 | 18.3 | 24.7 | 16.8 | 22.1 | 15.5 | 20.3 |
| 2040 | 18.9 | 25.7 | 17.1 | 22.6 | 15.7 | 20.4 |
| 2050 | 19.6 | 26.6 | 17.4 | 23.1 | 15.8 | 20.6 |
| 2060 | 20.2 | 27.6 | 17.8 | 23.6 | 16.0 | 20.8 |

Source: 1900 to 1980: At Age 65: Social Security Administration. Social Security Area Population Projections, 1985. Actuarial Study No. 95. SSA Pub. No. 11-1542. October 1985. Table 8b. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P-25. No. 952. Washington, DC. May 1984. Table B-5.

## SUPPORT TABLE FOR FIGURE 2.11.—EFFECTS OF MORTALITY ASSUMPTIONS ON PROJECTIONS OF POPULATION AGED 65 AND OVER 1980–2050

[In thousands]

| Year | Low | Middle | High |
|---|---|---|---|
| 1980 | 25,545 | 25,545 | 25,545 |
| 1990 | 31,941 | 32,697 | 32,480 |
| 2000 | 36,044 | 34,921 | 33,921 |
| 2010 | 41,611 | 39,195 | 37,089 |
| 2020 | 55,372 | 51,422 | 48,052 |
| 2030 | 70,498 | 64,581 | 59,559 |
| 2040 | 75,160 | 66,988 | 60,228 |
| 2050 | 77,721 | 67,411 | 59,283 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series p-25. No. 952. Washington, DC. May 1984. Tables 7-9.

## SUPPORT TABLE FOR FIGURE 2.12.—EFFECTS OF FERTILITY ASSUMPTIONS ON PROJECTIONS OF POPULATION AGED 65 AND OVER 1980–2050

[In thousands]

| Year | Low | Middle | High |
|---|---|---|---|
| 1980 | 25,545 | 25,545 | 25,545 |
| 1990 | 31,697 | 31,697 | 31,697 |
| 2000 | 34,921 | 34,921 | 34,921 |
| 2010 | 39,195 | 39,195 | 39,195 |
| 2020 | 51,422 | 51,422 | 51,422 |
| 2030 | 64,581 | 64,581 | 64,581 |
| 2040 | 66,988 | 66,988 | 66,988 |
| 2050 | 67,106 | 67,411 | 67,696 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983–2080. Current Population Reports. Series P-25. No. 952. Washington, DC. May 1984. Tables 7–9.

## SUPPORT TABLE FOR FIGURE 2.13.—EFFECTS OF IMMIGRATION ASSUMPTIONS ON PROJECTIONS OF POPULATION AGED 65 AND OVER 1980–2050

[In thousands]

| Year | Low | Middle | High |
|---|---|---|---|
| 1980 | 25,545 | 25,545 | 25,545 |
| 1990 | 31,571 | 31,697 | 31,744 |
| 2000 | 34,612 | 34,921 | 35,121 |
| 2010 | 38,632 | 39,195 | 39,641 |
| 2020 | 50,456 | 51,422 | 52,342 |
| 2030 | 63,004 | 64,581 | 66,767 |
| 2040 | 64,697 | 66,988 | 70,145 |
| 2050 | 64,480 | 67,411 | 71,701 |

Source: 1900 to 1980: U.S. Bureau of the Census. Decennial Censuses of Population. 1990 to 2060: U.S. Bureau of the Census. Projections of the Population of the United States, by Age, Sex, and Race: 1983 to 2080. Current Population Reports. Series P–25. No. 952. Washington, DC. May 1984. Table 8.

## SUPPORT TABLE FOR FIGURE 2.14.—PERCENT OF POPULATION VOTING IN PRESIDENTIAL ELECTIONS BY AGE GROUP ELECTIONS 1972 TO 1984

| Year | 25 to 34 | 35 to 44 | 45 to 64 | 65 and over |
|---|---|---|---|---|
| 1972 | 59.7 | 66.3 | 70.8 | 63.5 |
| 1976 | 55.4 | 63.3 | 68.7 | 62.2 |
| 1980 | 54.6 | 64.4 | 69.3 | 65.1 |
| 1984 | 54.5 | 63.5 | 69.8 | 67.7 |

Source: U.S. Bureau of the Census. Statistical Abstract of the United States: 1986. 106th Edition. Washington, DC 1985. Table 434.

## SUPPORT TABLE FOR FIGURE 2.15.—ESTIMATION AND PROJECTION OF EQUIVALENT RETIREMENT AGES: 1940–2060

[Social Security Administration projections]

| Year | Actual years | Relative years |
|---|---|---|
| Actual: | | |
| 1940 | 65.0 | 65.0 |
| 1950 | 67.2 | 66.5 |
| 1960 | 67.9 | 67.0 |
| 1970 | 69.2 | 67.1 |
| 1980 | 70.8 | 68.9 |
| Projected: | | |
| 1990 | 72.2 | 69.9 |
| 2000 | 73.5 | 70.8 |
| 2010 | 74.2 | 71.2 |
| 2020 | 74.8 | 71.6 |
| 2030 | 75.3 | 72.0 |
| 2040 | 76.0 | 72.4 |
| 2050 | 76.6 | 72.8 |
| 2060 | 77.2 | 73.2 |

Source: Based on concepts in Bayo, Francisco R. and Joseph F. Faber. Equivalent Retirement Ages: 1940–2050. Actuarial Note. No. 105. U.S. Department of Health and Human Services. Social Security Administration. June 1981. Figures updated by Alice Wade, Actuary, Social Security Administration.

## SUPPORT TABLE FOR FIGURE 2.16.—LABOR FORCE PARTICIPATION RATES FOR MEN AND WOMEN 1948–84

| Year | Male | Female | Year | Male | Female |
|---|---|---|---|---|---|
| 1948 | 86.6 | 32.7 | 1967 | 80.4 | 41.1 |
| 1949 | 86.4 | 33.1 | 1968 | 80.1 | 41.6 |
| 1950 | 86.4 | 33.9 | 1969 | 79.8 | 42.7 |
| 1951 | 86.3 | 34.6 | 1970 | 79.7 | 43.3 |
| 1952 | 86.3 | 34.7 | 1971 | 79.1 | 43.4 |
| 1953 | 86.0 | 34.4 | 1972 | 78.9 | 43.9 |
| 1954 | 85.5 | 34.6 | 1973 | 78.8 | 44.7 |
| 1955 | 85.4 | 35.7 | 1974 | 78.7 | 45.7 |
| 1956 | 85.5 | 36.9 | 1975 | 77.9 | 46.3 |
| 1957 | 84.8 | 36.9 | 1976 | 77.5 | 47.3 |
| 1958 | 84.2 | 37.1 | 1977 | 77.7 | 48.4 |
| 1959 | 83.7 | 37.1 | 1978 | 77.9 | 50.0 |
| 1960 | 83.3 | 37.7 | 1979 | 77.8 | 50.9 |
| 1961 | 82.9 | 38.1 | 1980 | 77.4 | 51.5 |
| 1962 | 82.0 | 37.9 | 1981 | 77.0 | 52.1 |
| 1963 | 81.4 | 38.3 | 1982 | 76.6 | 52.6 |
| 1964 | 81.0 | 38.7 | 1983 | 76.4 | 52.9 |
| 1965 | 80.7 | 39.3 | 1984 | 76.4 | 53.6 |
| 1966 | 80.4 | 40.3 | | | |

Source: U.S. Bureau of Labor Statistics. Handbook of Labor Statistics. Bulletin 2217. Washington, DC. June 1985. Table 5.

## SUPPORT TABLE FOR FIGURE 2.17.—FEMALE LABOR FORCE PARTICIPATION RATES BY AGE AND EDUCATIONAL ATTAINMENT: 1970 AND 1985

| Year | 25 to 34 | 35 to 44 | 45 to 54 | 55 to 64 |
|---|---|---|---|---|
| 1970: | | | | |
| Less than 8 | 28.1 | 38.5 | 39.9 | 32.6 |
| 1 to 3 years high school | 40.6 | 50.7 | 51.3 | 40.6 |
| 4 years high school | 48.7 | 53.8 | 58.1 | 51.2 |
| 1 to 3 years college | 47.7 | 53.4 | 58.1 | 51.7 |
| 4 or more college | 59.2 | 60.0 | 69.3 | 62.7 |
| 1985: | | | | |
| Less than 8 | 40.5 | 43.5 | 45.1 | 27.0 |
| 1 to 3 years high school | 54.7 | 62.1 | 56.0 | 33.7 |
| 4 years high school | 69.8 | 73.2 | 67.7 | 44.1 |
| 1 to 3 years college | 75.2 | 77.4 | 71.1 | 51.2 |
| 4 or more college | 82.4 | 79.5 | 79.7 | 61.0 |

Source: Unpublished data from the Bureau of Labor Statistics.

## SUPPORT TABLE FOR FIGURE 2.18.—CHANGES IN THE LABOR FORCE PARTICIPATION RATE BY AGE AND SEX: 1950 TO 1984

| Age | Rates 1950 | Rates 1984 | Percent change |
|---|---|---|---|
| Males: | | | |
| 16 to 19 | 63.2 | 56.0 | −11.39 |
| 20 to 24 | 87.9 | 85.0 | −3.30 |
| 25 to 34 | 96.0 | 94.4 | −1.67 |
| 35 to 44 | 97.6 | 95.4 | −2.55 |
| 45 to 54 | 95.8 | 91.2 | −4.80 |
| 55 to 64 | 86.9 | 68.5 | −21.17 |
| 65 plus | 45.8 | 16.3 | −64.41 |
| Females: | | | |
| 16 to 19 | 41.0 | 51.8 | 26.34 |
| 20 to 24 | 46.0 | 70.4 | 53.04 |
| 25 to 34 | 34.0 | 69.8 | 105.29 |
| 35 to 44 | 39.1 | 70.1 | 79.03 |
| 45 to 54 | 37.9 | 62.9 | 65.96 |
| 55 to 64 | 27.0 | 41.7 | 54.44 |
| 65 plus | 9.7 | 7.5 | −22.68 |

Source: 1950: U.S. Bureau of Labor Statistics. Handbook of Labor Statistics. U.S. Department of Labor. Bulletin 2217. Washington, DC. June 1985. Table 5. 1984: U.S. Bureau of the Census. Statistical Abstract of the United States: 1986. Washington, DC. 1985. Table 660.

## SUPPORT TABLE FOR FIGURE 2.19.—CHANGES IN LABOR FORCE PARTICIPATION AMONG MEN AND WOMEN, BY RACE AND AGE 1972 TO 1983

| | White 1972 | White 1983 | Black 1972 | Black 1983 | Percent change White | Percent change Black |
|---|---|---|---|---|---|---|
| Male: | | | | | | |
| 16 to 19 | 60.1 | 59.4 | 46.3 | 39.9 | −1.2 | −13.8 |
| 20 to 24 | 84.3 | 86.1 | 82.7 | 79.4 | 2.1 | −4.0 |
| 25 to 34 | 96.0 | 95.2 | 92.7 | 89.0 | −0.8 | −4.0 |
| 35 to 44 | 97.0 | 96.0 | 91.1 | 89.7 | −1.0 | −1.5 |
| 45 to 54 | 94.0 | 91.9 | 85.4 | 84.5 | −2.2 | −1.1 |
| 55 to 64 | 81.1 | 70.0 | 72.5 | 62.6 | −13.7 | −13.7 |
| 65 plus | 24.4 | 17.7 | 24.2 | 14.0 | −27.5 | −42.1 |
| Female: | | | | | | |
| 16 to 19 | 48.1 | 54.5 | 32.2 | 33.0 | 13.3 | 2.5 |
| 20 to 24 | 59.4 | 72.1 | 57.0 | 59.1 | 21.4 | 3.7 |
| 25 to 34 | 46.0 | 68.7 | 60.8 | 72.3 | 49.3 | 18.9 |
| 35 to 44 | 50.7 | 68.2 | 61.4 | 72.6 | 34.5 | 18.2 |
| 45 to 54 | 53.4 | 61.9 | 57.2 | 62.3 | 15.9 | 8.9 |
| 55 to 64 | 41.9 | 41.1 | 44.0 | 44.8 | −1.9 | 1.8 |
| 65 plus | 9.0 | 7.8 | 12.6 | 8.2 | −13.3 | −34.9 |

Source: U.S. Bureau of Labor Statistics. Handbook of Labor Statistics. Bulletin 2217. Washington, DC. June 1985. Table 5.

## CHAPTER 3. THE DEPENDENCY BURDEN OF AN AGING POPULATION: WHAT MEASURES DO WE HAVE*

Concern about the aging of the U.S. population arises, at least in part, from an apprehension that as society grows older, a greater proportion of the population will come to "depend" on others for part or all of their economic well being. This concern has been manifested in both analyses and speculation of what the consequences will be of an aging population.

But what exactly is "dependency?"

Some view it only as that situation in which certain members of society, unable to provide fully for themselves, must rely on others to share their economic gains. It is the emotional condition, characterized by despair and reflecting circumstances that are typically viewed as degrading and demoralizing, that becomes the focus of concern. From their perspective, addressing the problem of dependency means distributing wealth in ways that lessen peoples' perceptions of their need to rely on others.

Others view it in a less personalized way. It is the economic condition of society as a whole that concerns them. If fewer people are able or willing to work, the relative burden on those who do work must go up, or expectations about the standard of living that society can sustain may have to be lowered. From their perspective, addressing the problem of dependency means reducing the number of people who do not work and increasing the productiveness of those who do.

This analysis looks at dependency from the latter perspective—i.e., in the aggregate economic sense—because it has been the focus of recent policy discussions. Using historical data from the Census Bureau and projections from the social security actuaries—covering the period from 1920 to 2060—two different approaches of measuring dependency are examined. The first—referred to as the "conventional" approach—measures dependency by comparing the sizes of the younger and older segments of the population (under age 20 and age 65 and older) to that of the group commonly perceived to be of working age (20 to 64). The second measures dependency by comparing the size of the nonworking segment of the population to the size of the working segment, without regard to age.

These two approaches are the most common ways in which economic dependency has been discussed in terms of the aging of the population. However, they are clearly not definitive or comprehensive measures. Demographic statistics—even those which reflect numbers of workers and nonworkers—ignore many factors that have the potential to affect the prevalence and burden of dependency in society; in particular, economic growth. They provide signals or clues, but as such they are only "rough" indicators. Moreover, many economic transfers between people are not reflected in government statistics, so merely observing long-term trends in formal "transfer payments" from governments to individuals does not provide a complete picture.

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* This chapter was prepared by David Koitz, Congressional Research Service.

After describing what these two measures show about long-term trends in dependency, the ensuing discussion emphasizes why the indices should be viewed as "rough" indicators only and how difficult it is to conceive of a feasible, all encompassing measure. If any one theme emerges from the chapter as a whole, it is the suggestion that there is no definitive or "most appropriate" way to measure long-term trends in economic dependency, and that many assertions made about changes that are expected to occur in the future largely reflect value judgments about policy choices, not firm conclusions that can be gleaned from demographic or economic "facts."

## I. The Baseline: The Population Is Aging, the Elderly Are Working Less, and the Demands on "Institutional" Income Sources Are Growing

There is no question that the U.S. population is aging rapidly. In 1920, the median age was 25.9, by 1990, it is projected to be 33.[1] In 1920, 11 percent of the population was 55 or older. By 1985 it had risen to 21 percent. The 65 and older group rose from 5 percent to 12 percent.[2] At the same time, there has been a trend toward earlier and earlier retirement, at least as reflected by the age at which social security retirement benefits are first drawn [3] and by Labor Department statistics of the number of older people who are part of the nation's workforce, and "institutional" means of providing income to the elderly—social security, private pensions, governmental staff systems, welfare programs, etc.—have grown dramatically. Representing 3.9 percent of the U.S. Gross National Product (GNP) in the 1928–29 period, aggregate social welfare spending by Federal, State, and local governments [4] —a very large portion of which goes to the elderly—accounted for 19.4 percent of GNP in 1983.[5] Looking specifically at the post World War II period, social welfare expenditures rose almost seven-fold from 1950 to 1983 (in constant 1986 dollars [6]).

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[1] See "middle series" projections in U.S. Bureau of the Census. Current Population Reports, Special Studies, Demographic and Socioeconomic Aspects of Aging in the United States." Series P–23, no. 138, Aug. 1984 (table 2–9).

[2] Taeuber, Cynthia M. U.S. Bureau of the Census. America in Transition: An Aging Society. Current Population Reports, Series P–23, no. 128, Sept. 1983; and (for 1985) Bureau of the Census. Estimates of the Population of the United States, by Age, Sex, and Race: 1980 to 1985. Current Population Reports, Series P–25, no. 985, Apr. 1986, (tables A and B).

[3] U.S. Social Security Administration (SSA). Social Security Bulletin, Annual Statistical Supplement, 1986, (table 44), and unpublished preliminary data for 1985 furnished by SSA's Office of Research, Statistics, and International Policy.

[4] Social welfare spending is measured annually by SSA. It includes outlays for social security, civil service and military retirement, State and local pensions, veteran benefits, medicare, medicaid, and other welfare and related social programs.

[5] Merriam, Ida C., Skolnick, Alfred M., and Sophie R. Dales. Social Welfare Expenditures, 1968/69. Social Security Bulletin, Dec. 1968. p. 21 (table 2); and Bixby, Ann Kallman. Office of Research, Statistics, and International Policy. Social Security Administration. Public Social Welfare Expenditures, Fiscal Year 1983. ORSIP note no. 3, Dec. 1985.

[6] Derived from data contained in Bixby, ORSIP note no. 3, loc. cit.

## TABLE 3.1.—TRENDS TOWARD EARLY RETIREMENT

### Election of Social Security Retirement Benefits

| Calendar year | Average age of election [1] | | Percent electing before age 70 | | Percent electing before age 65 [2] | |
|---|---|---|---|---|---|---|
| | Men | Women | Men | Women | Men | Women |
| 1945 | 69.6 | 73.3 | 59 | 69 | 0 | 0 |
| 1965 | 65.8 | 66.2 | 88 | 86 | 30 | 48 |
| 1985 [3] | 63.7 | 63.4 | 99 | 99 | 66 | 75 |

### Labor Force Participation Rates by People 60–69 [4]

[In percent]

| | Ages 60–64 | | | Ages 65–69 | | |
|---|---|---|---|---|---|---|
| | Total | Men | Women | Total | Men | Women |
| 1948 | 49 | 84 | 19 | 41 | 61 | 16 |
| 1983 | 45 | 57 | 34 | 20 | 27 | 15 |

[1] Data for retired workers only; excludes survivors, spouses, etc.

[2] Benefits first became available before age 65 for women in 1956 and for men in 1961.

[3] Preliminary.

[4] Derived from U.S. Bureau of Labor Statistics' (BLS'). Employment and Earnings Reports. See Goss, Stephen C., Glanz, Milton, and Seung H. An. Office of the Actuary. Social Security Administration. Economic Projections for OASDI Cost and Income Estimates, 1984. Actuarial study no. 94, Jan. 1985.

## TABLE 3.2.—GROWTH OF GOVERNMENTAL "SOCIAL WELFARE" SPENDING

| Calendar year | Aggregate social welfare spending [1] | Social insurance [1] | Aggregate social welfare spending [2] | Social insurance [2] |
|---|---|---|---|---|
| 1928–29 | 3.9 | 0.3 | 30.9 | 2.7 |
| 1950 | 8.2 | 1.7 | 37.4 | 7.9 |
| 1983 | 19.4 | 10.0 | 54.8 | 28.2 |

[1] As a percent of GNP.

[2] Percent of all government spending.

Of the major categories of social welfare spending, social insurance saw the steepest rise.[7] In the 1928/29 period, public spending on education accounted for 62 percent of total social welfare spending. In 1983, social insurance, with 52 percent of the total, represented the largest segment. (Education has fallen back to 22 percent.) [8]

Led by social security and various health programs, Federal social welfare expenditures rose from 0.8 percent of GNP in the 1928/29 period to 12.1 percent in 1983. Federal spending explicitly for the elderly has shown a particularly notable rise in the past two decades, due primarily to expansions and the maturing of the social security retirement program and the introduction of medicare and medicaid in 1965.[9]

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[7] Social insurance consists of such programs as social security, medicare, public employee pensions, unemployment insurance, workers' compensation, etc.

[8] Derived from data contained in Merriam, Social Security Bulletin, Dec. 1968, loc. cit.; and Bixby, ORSIP note no. 3, loc. cit.

The rise in governmental spending on the elderly is just one manifestation, albeit the most pronounced, of how the elderly have come to rely on institutional sources of income. From 1945 to 1985, the number of people age 65 and older receiving social security benefits grew from 800,000 to 26.8 million (i.e., from 7 percent to 94 percent of the age 65 and older population).[10] The number of retired Federal annuitants rose from 1.7 million in 1950 to 2.8 million in 1984; recipients of State and local government pensions rose from 300,000 to 3.3 million. The number of workers covered by these systems grew from 1.9 million to 4.8 million in the Federal Government and from 2.9 million to 14.8 million in State and local governments.[11]

Similarly, the number of retirees receiving private pensions rose from 300,000 in 1950 to 7.6 million in 1984 (not counting those who received profit-sharing benefits).[12] And the number of wage and salaried workers with some form of private pension coverage grew from 9.8 million in 1950 to 38.3 million in 1984, representing an increase from 22 percent to 45 percent in the segment of the labor force covered.[13]

In 1962, 36 percent of aged household units reported having earnings from work, and those earnings represented 28 percent of their aggregate income. In 1984, only 21 percent of aged household units reported having earnings, and those earnings represented only 16 percent of their aggregate income. Some 40 percent of their aggregate 1962 income came from institutional sources, such as social security, private pensions, etc.; 51 percent of their 1984 income came from such sources.[14] Thus, as the population has been aging, the elderly have relied less and less on income from current work, and more and more upon institutional means, both governmental and private, of sustaining themselves.

From this stream of statistics one could easily jump to the conclusion that the aging of the U.S. population has been rapidly raising society's dependency burden, particularly in the post World War II period. The picture it paints is striking. However, whether these statistics show that excessive economic demands have been or will be imposed upon society is unclear. They are only selected indices. They are widely used in the debate because they are both easily observable and very suggestive. But they are not definitive. There are other, perhaps broader, measures of "dependency" in society, and other qualitative considerations that are often ignored only because there is no way to measure them.

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[9] Federal spending on the elderly rose from $44 billion in fiscal year 1971 to $264 billion in fiscal year 1985 (from 4.2 to 6.7 percent of GNP). See U.S. Bureau of the Census. Statistical Abstract of the U.S., 1986, (table no. 605).

[10] Derived from Statistical Abstract of the U.S., 1986, Bureau of the Census' Current Population Reports, Series P-23, no. 985, loc. cit, and the Social Security Bulletin, Oct. 1986. (The percentage cited for 1985 is based on social security recipients as of June 1985.)

[11] From the American Council of Life Insurance's Pension Facts, 1986 Update.

[12] See the Handbook of Pension Statistics, 1985, edited by Richard A. Ippolito and Walter W. Kolodrubetz, Chicago, Illinois, Commerce Clearing House, Inc., Jan. 1986. According to a 1977 social security study (Martha Yohalem, Social Security Bulletin, Nov. 1977), in 1975, 7.1 million persons received private pensions, profit sharing benefits, or lump sum distributions. This figure was 2.5 million higher than that which represented the number of "retirees" receiving private pensions in 1975 as shown in the Handbook of Pension Statistics. A comparable aggregated figure for 1984 is not available. Figures cited in the text also exclude persons receiving benefits from plans designed specifically for individuals, such as IRAs and Keoghs.

[13] Ibid.

[14] Reno, Virginia P., and Susan Grad. Economic Security, 1935-85. Social Security Bulletin, Dec. 1985.

## II. THE CONVENTIONAL "DEPENDENCY" DEBATE

By comparing the size of various age groups in the population, proponents of one social policy or another often attempt to make a case for how the burden of meeting society's demands for goods and services is distributed. Implicit is the assumption that people generally begin and end the "productive" period of their lives at the same ages. For instance, in some such analyses it is assumed that people under age 20 and over age 64 are not "producers," and that only those in the 20-64 age group work. Changes in society's dependency burden are then implied by the trends in the relative sizes of these three broad age groups.

To support the premise that the relative growth of the elderly is causing society's "dependency burden" to rise, it is pointed out that the 65 and older age group has grown from almost 8 percent of the population in 1945 to almost 12 percent in 1985, and is projected to grow still further to almost 22 percent in 2035. Similarly, where there were 7.5 people in the 20-64 age group for every person 65 and older in 1945, there were only 5 in 1985 and only 2.5 are projected for 2035.[15] Put more simply, this measure suggests that the growth of the elderly has raised the dependency burden on the 20-64 age group by 50 percent since 1945, and that it will double the burden over the next 40 years.

To counter this contention, others point out that comparing just the elderly population to the 20-64 age group ignores changes in the size of a much larger group of society's "dependents," namely children. They argue that it is the overall dependency figure of young (defined here as those under age 20) and old together that best reflects the relative changes in the economic burden imposed on the 20-64 age group.

Using this approach, dependency is shown to have been at its highest point in this century sometime around 1965, when the under-20 age group was composed almost entirely of the baby boom. It is now descending and in 2010 is predicted to reach a point lower than at any time in the 20th century. It then will rise again as the baby-boom generation enters retirement and will flatten out beginning around 2030-35.

Proponents of this approach point out that it does not show as alarming a long-range picture as the "aged-alone" measure. Instead of showing a doubling of dependency, it shows that the projected level of dependency in the next century actually would be lower than it was in the 1950s and 1960s at the height of the baby boom.[16]

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[15] Derived from data contained in the 1986 Old-Age, Survivors, and Disability Insurance (OASDI) trustees' report, Intermediate II-B projections (table A1).

[16] See Aaron, Henry J. When a Burden is Not a Burden? The elderly in America. The Brookings Review, summer 1986. p. 17-24; and Kingson, Eric, Hirshorn, Barbara A., and Linda K. Harootyan. The Common Stake: The Interdependence of Generations. A report published under the auspices of the Gerontological Society of America. Potomac, Maryland: Seven Locks Press, 1986.

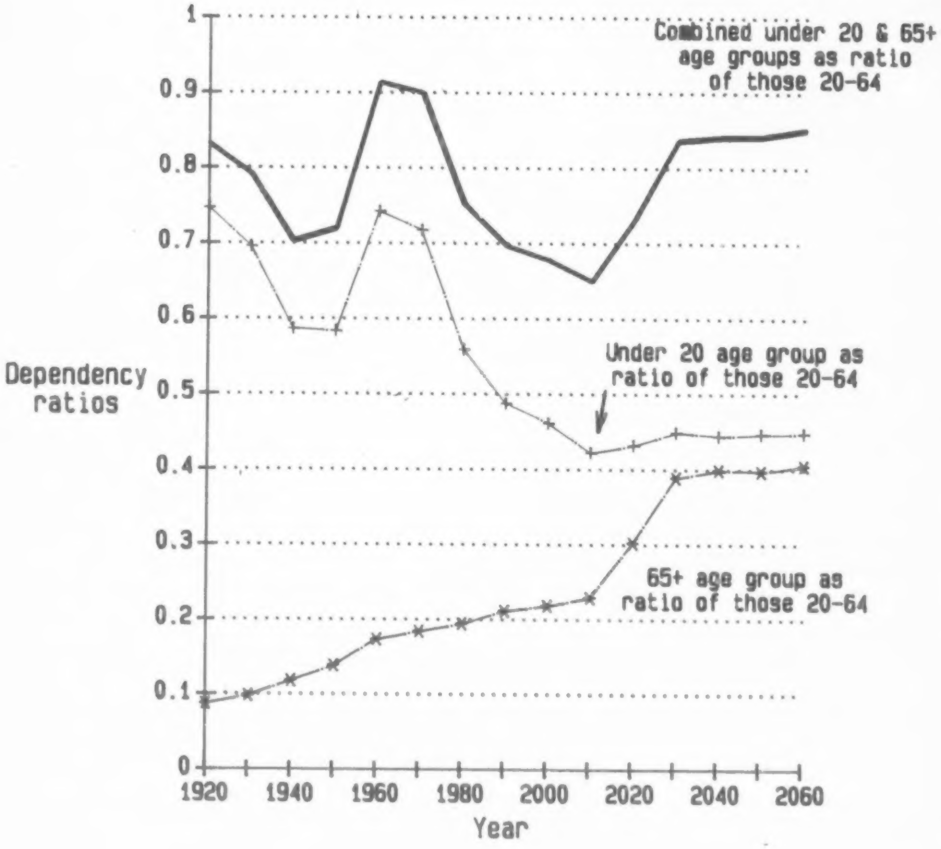
## TABLE 3.3.—AGE-DETERMINED DEPENDENCY RATIOS, 1920–2060 [1]

| Calendar year | Aged dependency ratio (65+ over the 20–64 age group) | Youth and aged dependency ratio (under 20 and 65+ over the 20–64 age group) [2] |
|---|---|---|
| 1920 | .086 | .831 |
| 1930 | .097 | .791 |
| 1940 | .117 | .702 |
| 1950 | .137 | .719 |
| 1960 | .172 | .913 |
| 1970 | .183 | .899 |
| 1980 | .193 | .751 |
| 1985 | .199 | .703 |
| 2000 | .210 | .677 |
| 2020 | .301 | .732 |
| 2040 | .398 | .841 |
| 2060 | .404 | .851 |

[1] The ratios for 1920–40 were derived from Historical Statistics of the U.S., Colonial Times to 1970, (table A 119–134); the ratios for subsequent years are from the 1986 OASDI trustees' report (table A1). The Intermediate II–B projections were used for the year 2000 and later.

[2] The high in this series is 1965, when the ratio was .950.

Figure 3.1 Age-Determined Dependency Ratios 1920-2060



Both of these measures of dependency have their uses. The "aged" dependency figures are clearly not a gauge for "how much" the aggregate dependency load is, has been, or will be on the producing segment of society, and their use to "alarm" leads to misunderstanding. However, they do reflect the direction of a very large segment of governmental and other institutional expenditures that are targeted much more heavily toward the elderly than any other major age group.[17] More so than children, who depend in large part on their families for their economic well-being, the elderly rely on institutions (governmental or otherwise) to provide them with the income to meet their economic needs.

One study done in 1978 suggested that "per capita" public expenditures for the elderly were almost 2.5 times those made for children under 18 (50 percent higher than those made for college students). Using census population projections, the study hypothesized that whereas aggregate public expenditures for the elderly were approximately equal to those made for children in the mid-1970s, by the year 2050 aggregate public expenditures for the elderly could be twice as large as those made for children.[18]

Clearly, the shifts in the relative size of the elderly population have the potential to cause large swings in the demands imposed on governments and by them on the public for taxes. Thus, the "aged" dependency ratio may suggest a strain on financial institutions—including those of government—while not being very useful as a measure of the overall economic burden on society's workers.

The combined "aged-youth" dependency figures also are not a gauge of the magnitude of the shifts in demands imposed on the producing segment of society, but they do provide a broader measure of the direction those demands may go. They are hardly definitive, but they do recognize that another, even larger, segment of society generally does not "produce" goods and services for itself or others. People under age 20 are now more than twice as large a group as those age 65 and older, and even though the difference in the size of the two groups is projected to diminish in the future, the under age 20 group is expected to retain numerical dominance long into the future.[19] Children have to be clothed, fed, and sheltered just as the elderly do. In other words, they "consume," and therefore they very much affect the economic demands imposed on the producing segment of society. Economic demands on society's "producers" are not measured merely by governmental tax rates.

However, frequently the combined "aged-youth" dependency measure is used simply to deflect the concern raised by the "aged-alone" dependency figures. Much less attention is given to what the "aged-youth" dependency figures show in and of themselves.

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[17] For additional discussion of the elderly's reliance on "governmental" sources of income see Etheredge, Lynn. An Aging Society and the Federal Deficit. Milbank Memorial Fund Quarterly/Health and Society, v. 62, no. 4, 1984; and Longman, Phillip. Justice Between Generations. The Atlantic Monthly, June 1985.

[18] This analysis considered only the change in the age mix of the population (other factors were held constant). See Clark, Robert L., and Joseph J. Spengler. Changing Demography and Dependency Costs: The Implications of Future Dependency Ratios and Their Composition. [In] Barbara Herzog. Aging and Income, Programs and Prospects for the Elderly. New York: Human Sciences Press, 1978.

[19] Under the Intermediate II-B projections of the 1986 OASDI trustees' report, children are expected to outnumber the elderly continuously for the next 75 years.

A close look at them would suggest that the dependency load has undergone significant changes in recent decades and according to current population projections will continue to do so over the next 40 years. Most pronounced was the rise in the 1950s and the decline in the 1970s. They both were sharp, although the period of "high dependency" between them was relatively short. At its peak the dependency load was 30 to 40 percent higher in 1965 than it was in the 1930-50 period. Lower dependency levels are projected for the 1985-2015 period—levels that would be roughly comparable to those of the 1930-50 period—but with the baby boomers' entry into their advanced years in the 2010-20 period, dependency levels are expected to rise again, to a plateau that will be roughly 25 percent higher than the average dependency levels of the 1985-2015 period. (From its low point in 2010, the dependency load would rise by 30 percent before it flattens out.) [20]

TABLE 3.4.—SWINGS IN PROJECTED DEPENDENCY RATIOS, 1985-2035

[Percent difference in dependency (as measured against projected dependency ratios in 2010)] [1]

| Calendar year | Aged dependency | Youth dependency | Combined aged-youth dependency |
|---|---|---|---|
| 1985 | 87 | 120 | 108 |
| 1990 | 92 | 115 | 107 |
| 1995 | 96 | 113 | 107 |
| 2000 | 95 | 109 | 104 |
| 2005 | 95 | 104 | 101 |
| 2010 | 100 | 100 | 100 |
| 2015 | 114 | 100 | 105 |
| 2020 | 132 | 102 | 113 |
| 2025 | 154 | 105 | 122 |
| 2030 | 170 | 106 | 129 |
| 2035 | 175 | 106 | 130 |

[1] Dependency under the "youth" and combined "aged-youth" measures is projected to be at its lowest point in or around the year 2010

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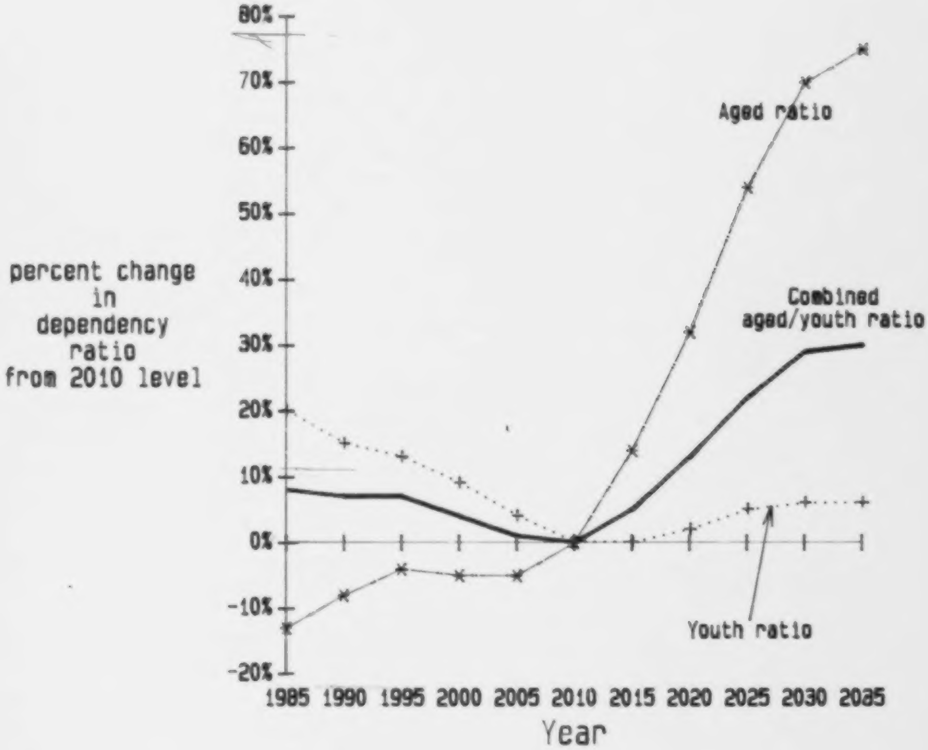
[20] This scenario reflects the Intermediate II-B population projections of the 1986 OASDI trustees' report.

Figure 3.2 Swings in Projected Dependency Ratios 1985-2035



Often overlooked within these figures is the way the projected number of children affect them. Typically, the dependency argument is framed in such a way as to suggest that the cost of the growing number of elderly will be offset by savings from having a smaller proportion of children in the population. The ratio of children to people in the 20–64 age group has been falling in recent decades and is projected to continue to do so for the next three, but if current projections held, the "youth" dependency ratio actually would end its decline, perhaps even rise slightly, early in the next century, which would be the period when "aged" dependency is projected to undergo its sharpest rise in the next 4 decades.[21]

The point is that the dimensions of the projected shifts in dependency reflected by the "aged-youth" dependency measure have and will continue to be significant, but those shifts are often obscured in the debate by the emphasis given to answering allegations about the growing burden the elderly will cause.[22] The relatively high levels of "aged-youth" dependency that prevailed in the 1955–75 period are not the stepping-off point for the 2015–35 period. In the intervening years society will have become accustomed to lower levels. A 25 percent rise in dependency in the next century from levels projected to occur during the next three decades may not be alarming, but it is not necessarily minor. Of particular note is that, in contrast to the high dependency of the 1955–75 period, the elevated levels projected for the next century are not expected to decline when the baby boomers die off, as they did when the baby boomers emerged from their childhood.

Granted, neither the "aged-alone" nor the combined "aged-youth" dependency measure is an economic one. If a reliable value could be determined for the per capita resources consumed by the young vis-a-vis the elderly, a more definitive assessment of the aggregate needs of each group could be made, and these two dependency measures could take on greater economic meaning. And if one then could assign an "investment" value to each dollar of resources expended on the young vis-a-vis the elderly (for instance, that which results from educational spending on children or from restorative health measures that allow the elderly to be self-sufficient longer), further insight could be gained about the economic consequences of the U.S. society's changing age structure.

However, the paucity of studies on the subject reflects the inherent difficulties of conducting such analyses. There is little data available, the consumption patterns of each group change over time (never mind that those who make up each age group are far from being a homogeneous lot), and the idea of assigning "investment values" to expenditures made on the young and the old is more a theoretical concept than something that can be done analytically (the value judgments about what constitutes such "investments" are too diverse to achieve a consensus for measurement).[23]

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[21] Given that projections of youth dependency are highly sensitive to the fertility assumptions used, this point should not be overemphasized. In the past, demographers have had great difficulty in accurately projecting fertility. Since fertility today is highly subject to personal control, upward or downward shifts can occur unpredictably. Nonetheless, government and other demographers currently consider these assumptions to fall within a reasonable range of possible outcomes given recent fertility trends, and as such the assumptions are used in formulating financial projections for such programs as social security and medicare and in many other ways by private actuaries and economists in meeting long-range forecasting needs.

[22] For example, see James H. Schulz. Voodoo Demographics. The Christian Science Monitor, Oct. 29, 1986.

Thus, the persistent use of "age-determined" dependency statistics as proxies for indices of the economic demands on institutions or on the "producing" segment of society at large is not simply the result of shortsightedness. Rather, it results from the lack of a better measurable alternative.

## III. ANOTHER DEPENDENCY PERSPECTIVE: THE RATIO OF NONWORKERS TO WORKERS

Comparing the size of broad age groups in the population at different times gives hints of shifts in economic dependency, but "age-determined" dependency figures alone ignore many other factors that have the potential to affect economic conditions to a much greater extent. The availability of jobs, attitudes about work, child rearing, and retirement, productivity improvements, trends in personal and national savings, the availability of investment capital are but a few of the variables which affect the incidence and degree of economic dependency in society.

The uncertainty of what "age-determined" dependency figures show is cryptically illustrated by contrasting their recent trends to the performance of the economy over the past few decades. The 1950s and 1960s generally are perceived as periods of high dependency because of the baby boomers' being in their youth, yet they also were periods of considerable economic growth. Real GNP grew by an average of 3.6 percent annually from 1955 through 1969, but only by an average of 2.5 percent annually over the following 15 years.[24] However, the combined "aged-youth" dependency ratio increased substantially through most of the earlier period and declined rapidly during the latter 15-year period—from 1970 to 1985, it dropped by 22 percent—and on average it was more than 10 percent lower during this period than during the 1955–69 period.

If dependency was so high in the 1950s and 1960s, why did the economy perform so favorably? Is it that the "high dependency" dampened what would have been even more favorable economic conditions? Did the "declining dependency" later improve what would have been even less robust conditions? Was there possibly a favorable "consumption" effect from the "high dependency"—i.e., did greater consumption demands spur economic growth? Just how significant was the level of "age-determined" dependency in determining overall economic conditions?

While it is not possible to determine the extent to which these other economic factors influence or are influenced by broad population shifts, their potential significance can be shown by making a relatively simple refinement of the concept of dependency. Instead of assuming that everyone under age 20 and over age 64 is a societal dependent, and that all those in the 20–64 age group are "producers," consider an approach that actually measures the change in the relative composition of workers to nonworkers in the population. Under this approach, the number of people wo are employed

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[23] See Crown, William H. Some Thoughts on Reformulating the Dependency Ratio. The Gerontologist, v. 25, no. 2, 1985.

[24] Derived from various data series contained in the 1986 Economic Report of the President.

(regardless of age) are considered to be the "producers." Those who are not employed are considered to be society's dependents. Thus, the index of overall dependency would be the ratio of the number of people who don't work to the number of people who do.

Looking back over the past 65 years, this approach presents a very different picture of overall trends in societal dependency than the broad population approach.

Where dependency shown by comparing the young and old to the middle age group appears to have risen dramatically in the 1950s and 1960s from levels prevailing in the preceding three decades, and has since fallen at an equally dramatic rate, the level of dependency reflected by comparing nonworkers to workers shows a slight downward trend over the 50-year period from 1920 to 1970 (ignoring the 1930s' depression and the World War II period). In other words, the post World War II baby boom might have greatly increased the number of children in society, and the labor force participation by the elderly may have notably declined in the 1950s and 1960s, but employment in the United States rose so significantly that the overall relationship of nonworkers to workers in society did not change very much.

Why? The principal reason is that women not only were bearing children at a high rate in the post World War II period, but they also were significantly increasing their participation in the workforce. And their participation has continued to rise.[25]

TABLE 3.5—NUMBER OF NONWORKERS FOR EVERY WORKER IN THE POPULATION [1]

| Calendar year | Workers [2] | Nonworkers [2] | Ratio of nonworkers to workers [3] |
|---|---|---|---|
| 1920 | 39,588 | 66,873 | 1.69 |
| 1930 | 44,443 | 78,745 | 1.77 |
| 1940 | 48,060 | 84,062 | 1.75 |
| 1950 | 60,399 | 91,872 | 1.52 |
| 1960 | 68,309 | 112,362 | 1.64 |
| 1970 | 82,008 | 123,044 | 1.50 |
| 1980 | 101,441 | 126,297 | 1.25 |
| 1985 | 109,397 | 129,886 | 1.19 |
| 2000 | 129,943 | 147,536 | 1.14 |
| 2020 | 136,072 | 173,252 | 1.27 |
| 2040 | 136,993 | 189,133 | 1.38 |
| 2060 | 139,860 | 194,697 | 1.39 |

[1] The statistics representing the number of people not working were derived from population statistics which include the armed services overseas. The number of workers was calculated by adding the number of people in the armed services to the number of people "employed" in the civilian population. (They are not to be confused with labor force statistics, which include both employed and unemployed workers). Historical data were obtained from U.S. Bureau of the Census. "Current Population Reports: Population Estimates and Projections," Series p-25, no. 985, and Historical Statistics of the U.S. Colonial Times to 1970; the 1986 Economic Report of the President; and BLS' Employment and Earnings Report for Jan. 1986. Future projections were provided by the Office of the Actuary of SSA based on the Intermediate II-B forecast of the 1986 OASDI trustees' report.

[2] In thousands.

[3] The ratios were 2.04 and 1.18 for 1935 and 1945 respectively.

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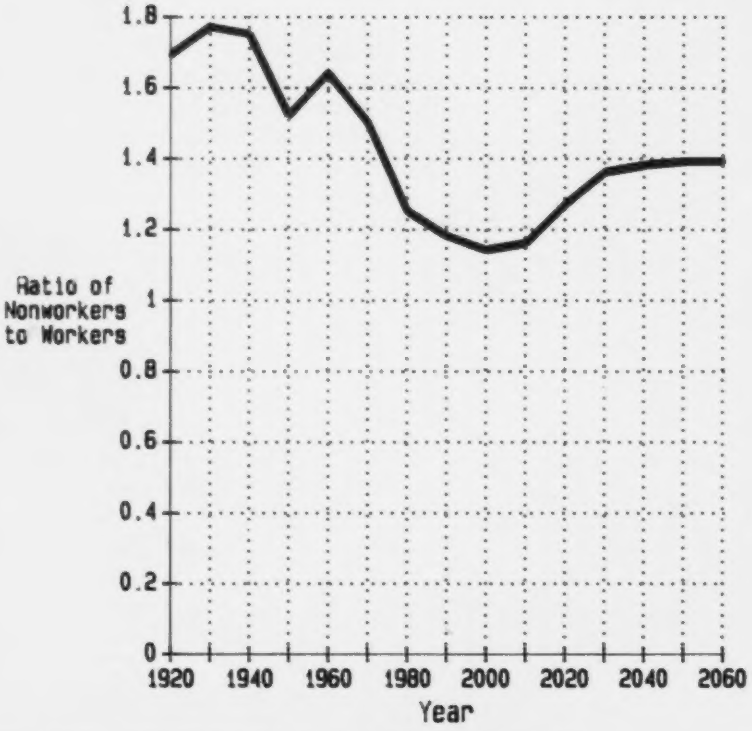
[25] In fact, the increase in female workers has been so pronounced that a greater percentage of the overall population is working today than 40 years ago, despite the declining labor force participation rates among older men.

Figure 3.3 Employment-Related Dependency Ratios, 1920-2060

(Number of Nonworkers for Every Worker in Population)



The effects of Depression & World War II are not reflected so that long-range pattern of ratios can be observed

The most significant shift in dependency shown by this measure is a decline that has occurred over the past 20 years. Dependency is lower today than at any time since at least 1920 (the World War II period aside), and under current projections it would fall a little more over the next 15 to 20 years.

Since on average workers in the economy have tended to work shorter and shorter hours in the post World War II period, one might expect that the pattern of "nonworker-worker" dependency might be different if a trend toward shorter workweeks were reflected in the calculations.[26] For example, if average hours worked per week fell by 10 percent over a particular period, while at the same time the number of people working rose by 10 percent, the actual number of hours worked in the economy would not have changed. Therefore, a "nonworker-worker" dependency ratio that only reflected an increase in workers would show a lower dependency burden than if a drop in average work hours also were reflected.

### TABLE 3.6.—NUMBER OF NONWORKERS FOR EVERY WORKER IN THE POPULATION

[Adjusted for decline in average hours worked weekly] [1]

| Calendar year | Workers (adjusted) [2] | Nonworkers [2] | Ratio of nonworkers to workers |
|---|---|---|---|
| 1950 | 60,399 | 91,872 | 1.52 |
| 1960 | 66,249 | 112,362 | 1.70 |
| 1970 | 76,445 | 123,044 | 1.61 |
| 1980 | 89,972 | 126,297 | 1.40 |
| 1985 | 96,478 | 129,886 | 1.35 |
| 1990 | 102,794 | 139,819 | 1.36 |
| 2000 | 109,701 | 147,536 | 1.34 |
| 2020 | 108,037 | 173,252 | 1.60 |
| 2040 | 102,573 | 189,133 | 1.84 |
| 2060 | 98,394 | 194,697 | 1.98 |

[1] Adjustments were made based on statistics of "average weekly hours worked" in private non-agricultural employment since 1950 compiled by BLS (data for this series is derived from Census' Current Population Surveys). Although "average hours worked" data for selected industries extends back to the late 1800s, the aggregated series used here dates back only to 1947 (see 1986 Economic Report of the President). Projections of average workweeks are from unpublished data furnished by the Office of the Actuary of SSA based on the Intermediate II-B assumptions of the 1986 OASDI trustees' report (these future assumptions attempt to extend the historical series).

It has to be kept in mind that this measure of average hours worked is not an all-encompassing measure for work performed in the economy. The measure used here is a proxy (for lack of more comprehensive data). Among its major weaknesses is that it fails to include agricultural work and self employment.

Similarly, the overall dependency figures shown in the table do not take improvements or expected improvements in productivity into account.

[2] In thousands.

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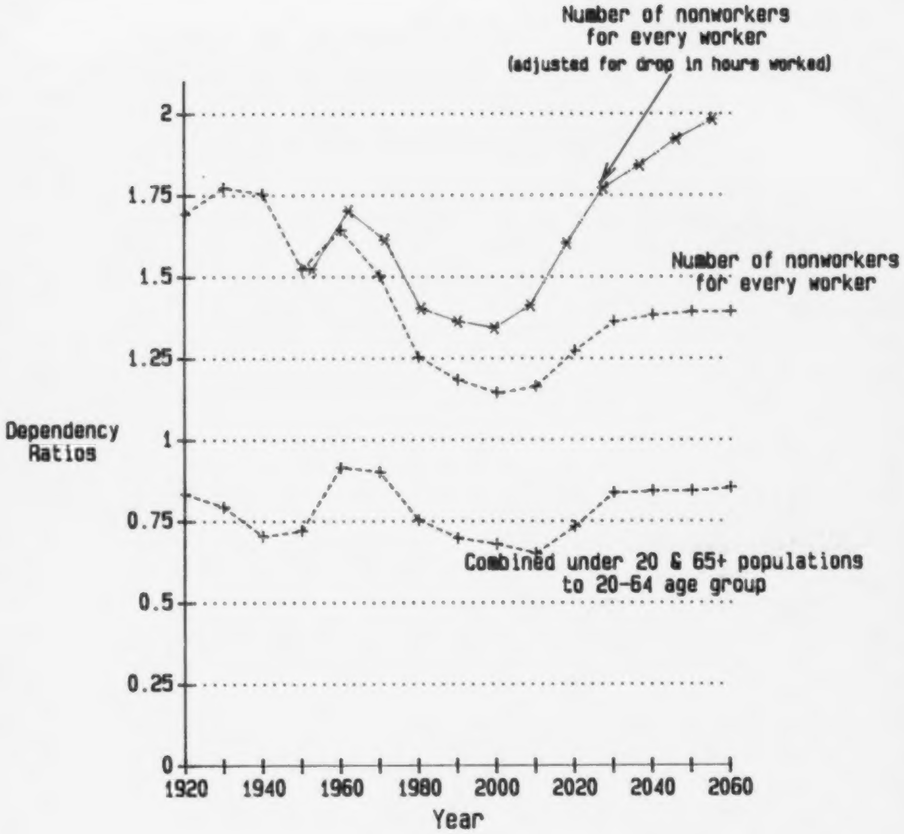
[26] The decline has been most notable in the growing services sector of the economy and is presumably due in part to rising part-time employment. There has been virtually no change in hours worked in the manufacturing or construction trades. See the 1986 Economic Report of the President, table B-41.

Figure 3.4 Comparison of Alternative Dependency Measures



However, even after the "nonworker-worker" dependency ratio is adjusted for the decline in average weekly hours of work from 39.8 in 1950 to 35.1 in 1985 (a 12 percent drop), its pattern of a relatively long period of "stable" dependency followed by a sharp decline in the past decade is changed only slightly. The adjusted ratio shows a small elevation of dependency during the 1950s/1960s, and a somewhat less pronounced decline since then.[27]

In contrast to these historical differences, future projections of these "nonworker-worker" approaches to measuring dependency show considerable similarity to age-determined dependency figures. After falling to a low point in or around 2000, dependency as measured by these two approaches is projected to rise again beginning in the years in which the baby boomers begin entering retirement, and to continue to rise thereafter.[28] Under the straight "nonworker-worker" measure, the rise is projected to be somewhat smaller than under the "aged-youth" measure—increasing by 22 percent between 2000 and 2060, in contrast to 31 percent under the "aged-youth" figures. However, the "nonworker-worker" measure, adjusted for a projected decline in average hours worked per week, the rise is projected to be greater than that shown by the "aged-youth" measure—48 percent vs. 31 percent.[29]

This general similarity is due in large part to the assumption that older workers in the future will choose to retire at approximately the same ages that people do today.[30] Overall labor force participation is projected to fall as an increasingly larger proportion of the population is projected to be in retirement. Consequently, the pattern of rising dependency shown for the next century under these two "nonworker-worker" measures is directly related to the projected growing number of elderly people in the population. If it were assumed that the recent trend toward early retirement will continue into the future (instead of roughly leveling off), the "nonworker-worker" dependency figures would rise at an even faster rate. If, on the other hand, it were assumed that recent retirement trends were to reverse themselves or be reversed (i.e., if future workers were to retire later than people do today), the future rise in the dependency figures could be significantly tempered. Similarly, if it were assumed that female labor force participation will remain at today's level (instead of rising by another 10 percent over the next 2 decades),[31] or that the decline in hours worked per week were to fall even faster than projected, the dependency figures would rise even faster, and vice versa under contrasting assumptions.

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[27] It should be recognized that adjusting these dependency figures for changes in the average number of hours worked per week is only one of a multitude of alterations that could be made. Productivity, for instance, can significantly affect total labor output, and it rose while average weekly hours worked fell (albeit not evenly). The adjustment reflected here for average hours worked was made not so much to refine the "nonworker-worker" dependency concept, but to show that it too can be significantly influenced by additional economic factors.

[28] Although it tends to flatten out beginning around 2030.

[29] Under the Intermediate II-B assumptions of the 1986 OASDI trustees' report, the average work week is projected to decline from 35.1 hours in 1985 to 28.0 in 2060.

[30] Under the Intermediate II-B assumptions, the average age at which social security retirement benefits are elected is projected to rise only slightly—from age 63.7 today to 64.2 in 2030 for men, and from age 63.4 to 64.2 for women.

[31] The assumption made under the Intermediate II-B forecast of the 1986 OASDI trustees' report.

The basic point here is that the future pattern of rising dependency could be significantly influenced by labor market conditions, attitudes about work and retirement, the availability and generosity of public programs for the elderly, and other factors—besides age—that determine the number of people who work in society. Moreover, many of these other factors are influenced by demographic conditions: a sharp upswing in retirement, for instance, could cause wage levels for experienced workers to rise, and thereby induce longer working hours, discourage others from retiring, etc. Thus, as in the past, it is possible that the future pattern of dependency shown by current projections of nonworkers to workers could differ noticeably from the "age-determined" projections.[32]

## IV. WHO DOES SOCIETY'S WORK?

Beyond the question of how the aggregate proportion of workers and non-workers in society has changed over time, there is the underlying issue of whether and how the contribution to society's economic well being may differ from one generation to the next. For instance, do younger age groups have to work more because older age groups are retiring earlier and growing as a proportion of the population?

Labor force participation in older age groups has dropped significantly since 1948, particularly among men. The participation rate by those aged 65–69 fell from 40.5 percent in 1948 to 20.3 percent in 1983.[33] In 1948 there were 15 people age 65 and older not working for every 100 employed civilian workers in the population.[34] In 1985, there were 21.4. Similarly in 1948 there were 3.1 people not working in the 65 and older age group for every worker in that age group; in 1985, there were 8.2. However, labor force participation in other age groups for the most part has risen. For those aged 25–29, it rose from 64 to 81 percent; for those aged 35–39, it rose from 66 to 82 percent; and for those aged 45 to 49, it rose from 66 to 79 percent.

Thus, if a constant proportion of the population needed to work in order that society's demands for goods and services be met, it could be argued that more people in the 20–64 age group—women in particular—have been forced to work today because the elderly are working less.

However, the fact that relatively more people in the 20–64 age group are working is the likely result of many economic and social factors. On the one hand, it may reflect the economic strain imposed by the increasing chunk of family income and earnings that has been taxed by the various levels of government to expand public services and to increase transfer payments under social programs, much of which goes to the elderly as a target group. Personal and social insurance taxes from all levels of government and other deductions from income represented 7 percent of total personal income in the United States in the early 1940s; today, they represent 29 percent.[35]

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[32] Unclear, however, is "how easily" these other variables could reduce the future ratios of nonworkers to workers. In 1950, with labor force participation by those ages 20–60 hovering in the 65 percent range, there may have been more room for labor force expansion than when 80 percent of them are in the workforce, as is projected for the year 2010. See labor force participation rate projections under the Intermediate II–B forecast in Goss, Glanz, and An, Actuarial Study no. 94, loc. cit.

[33] See Goss, Glanz, An, Actuarial Study no. 94, loc. cit.

[34] The population data were derived from the Statistical Abstract of the U.S. 1986, and Historical Statistics of the U.S. Colonial Times to 1970. The employment data were derived from the Handbook of Labor Statistics, June 1985, and BLS' Employment and Earnings Report for Jan. 1986.

But it also may reflect changes in attitudes about child rearing and the rising expectations of a society seeking ever greater material well being. In 1957, after reaching its highest level in at least 40 years, the Nation's birth rate fell precipitously, and for 15 years now it has been lower than in any preceding period for which estimates exist.[36] [37] This may have been accompanied by changes in societal attitudes about women in the labor force. And while more personal income in the United States is being taxed, aggregate personal incomes have risen by far more than the rise in taxes in the past 40–50 years, perhaps driving or being driven by a desire for more material well being.

Moreover, the productivity of the Nation's workers has risen significantly over the past 40 years as machines have become of increasingly greater assistance in the production process, and individual workers today are capable of producing much more than workers did 40 years ago. As a result, society does not need to have as many people working to maintain a given or even rising standard of living. Thus, to some extent the decline in labor force participation by the elderly may have been offset not only by an increase in workers in the 20–64 age group but by the increased productivity of the Nation's workers.

The fact is that there have been a number of broad economic and demographic trends over the past 40 years. They did not occur independently, but it is not possible to say that one was the cause or consequence of another. Nor is it possible to say to what extent they may have offset one another.

## V. THE DIFFICULTY OF MEASURING INTERGENERATIONAL SACRIFICES

Whatever the cause of the increase in workers in the 20–64 age group, can it be said that because they have to give up a greater share of their incomes today to carry a larger number of people who do not work, they are less well off than workers in the past?

As described earlier, we can measure the growth of institutional economic transfers fairly well, in both absolute and relative terms, and we know that the share of income that current workers must give up to finance them has grown significantly. We know, for instance, that the social security tax was 1 percent on the employee in 1945, and that it is 7.15 percent today.[38] We know that employer contributions to social insurance and other employee benefit programs were 5.3 percent of employee compensation in 1950 and that they were 19.3 percent in 1983.[39] And we know that individual transfer payments other than social security have risen from 5.4 percent of personal income (excluding transfers) in 1948 to 8.2 percent in 1984.[40]

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[35] Derived from various data series contained in the 1986 Economic Report of the President. For these calculations, transfer payments (i.e., social security, welfare payments, veterans' benefits, governmental pensions, etc.) were excluded from personal income. The periods compared were 1940–42 to 1983–85.

[36] In the early 1920s, women were bearing children at a rate in excess of three babies per woman in her lifetime. The rate fell to a low of 2.2 in the 1933–40 period. It subsequently rose to a high of 3.7 in 1957, and fell again to a low of a little more than 1.7 in 1976. It is now hovering in the range of 1.80–1.86. See Wade, Alice H. Office of the Actuary, SSA. Social Security Area Population Projections, 1986. Actuarial Study no. 97, Oct. 1986, (Table 3.3).

[37] By the same token, it could be argued that the declining birth rate of the past two decades is related in part to the rising tax burden and the making of the costs of raising children "more apparent" in a family's economic choices at the same time that families have greater control over the number of children they choose to have. However, the rising tax burden cannot be blamed for the very long-term decline in birth rates that seems to have taken place since the middle of the 18th century. Some demographers see current trends simply as a continuation of the trend.

Thus, is can be said and documented that economic support for the elderly through institutional means of transfer has grown quite dramatically. But what about support that is not institutional? That which goes on inside a family—between children and parents, brothers and sisters—between neighbors and friends, or in a communal or congregational setting?

To what extent have formalized means of economic transfer taken the place of less formal family and communal means of support? We know much less about that.

It may have been more common 40 years ago to find elderly parents living with their children, particularly given that 17 percent of the U.S. households still resided in a farm setting (in contrast to the roughly 2 percent who do today).[41] Elderly parents may even have owned or been the leaseholder of the house or farm where their children's family lived. As such, they would have reaped the benefits of the household's immediate income, even when they did not contribute to it, and both provided and received other forms of economic support. Today, the majority of aged couples and nonmarried elderly live alone or with nonrelatives.[42] In 1960, some 17 percent of people 65 and older lived alone. In 1983, almost 29 percent did, and only 13 percent lived with relatives other than a spouse.[43] And between 1960 and 1980, the number of people residing in homes for the aged rose three fold, while the age 65 and older population rose by only 54 percent.[44]

Similarly, communal, church, and other charitable support probably was made up heavily of what we now call "in kind" transfers (i.e., the actual provision of food, clothing, shelter, etc.). Since money wasn't the medium of exchange, there are few "data" sources to draw upon here either.

Given these factors, how does one measure what the aggregate economic transfers were between the young and the old 40 years ago and compare them to what they are now?

We can speculate that perhaps these other means of support were of greater prevalence and significance in the past. People probably did not have much individual savings to draw upon,[45] and institutionalized transfer programs were only at their rudimentary stages.[46] So where else could the elderly turn? If not paid work, family and communal support are the intuitive answers. But we cannot document it.

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[38] Including the Hospital Insurance (HI) portion, the total tax rate will rise to an ultimate rate of 7.65 percent in 1990 under current law.

[39] Reno and Grad, loc. cit.

[40] Derived from data contained in the 1986 Economic Report of the President.

[41] Statistical Abstract of the U.S., 1985, and Historical Statistics of the U.S., Colonial Times to 1970.

[42] Office of Research, Statistics, and International Policy, SSA. Income of the Population 65 and Over. SSA publication no. 13-11727, Revised Sept. 1986.

[43] Statistical Abstract of the U.S., 1985.

[44] Ibid.

Government survey takers were not in the business of asking family members about how they provided for one another. It is only in an era of major formalized transfer programs that the question has become a significant one. Even today, government survey takers do not gather much information about the informal forms of economic transfer between generations. Alimony and child support is recorded on income tax returns, but no institutionalized survey process attempts to obtain comprehensive data about family gifts and bequests. We know only a little more about charitable exchanges.

What then can be said about intra-family and other informal means of support to the elderly? At a minimum, perhaps, that it poses a significant void in trying to respond to the question about whether the elderly receive more or less economically from their children today than they did 40 years ago.

Perhaps one way to say that they do is by showing that their overall economic status in society has improved much more than that of other age groups. The percent of elderly families in poverty dropped from 27 percent in 1960 to 8 percent in 1983 (from 68 to 28 percent for unrelated individuals). Both family and individual incomes of the elderly rose more sharply than that of the non aged population. And while the mean household after-tax income of the aged in 1983 was still only 64 percent as large as that of the non aged, the per capita after-tax income of the elderly was 9 percent higher than that of the non aged.[47]

Has this improvement in the economic status of the elderly been achieved at the expense of other age groups?

Economists will tell us that we are a wealthier society on the whole today than we were 40 years ago. After adjustment for inflation, per capita disposable income has risen by more than 100 percent since 1947.[48] Similarly, the average "real" income of the Nation's families (84 percent of which are headed by people under age 65)[49] also stands twice as high today as it did in the late 1940s, and average "real" weekly earnings in private non-agricultural employment is 40 percent higher.[50] If, in fact, these rough measures of income indicate that as a whole we are better off today than those who made up society 40 years ago, the burden on those who make up the "productive mainstream" today has not been made so large as to cause them to actually "lose ground."

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[45] One study done in 1938 stated that possibly only one-third of the non-institutionalized elderly "were self-dependent—sustaining themselves on earnings, income from assets, veteran's benefits, or public or private pensions." (A study done by Majorie Shearon appearing in the March 1938 issue of the Social Security Bulletin.) For a lengthier description, see Reno and Grad, loc. cit.

[46] For instance, the Reno-Grad report (loc. cit.) showed that only 22 percent of the elderly received public assistance or social security payments in 1940 (mostly public assistance), but by 1982, the figure had grown to more than 95 percent.

[47] Reno and Grad, loc. cit.

[48] Derived from data contained in the 1987 Economic Report of the President.

[49] Based on survey of family structure in 1984. See U.S. Bureau of the Census. Household and Family Characteristics: March 1984. Current Population Reports, Series P-20, no. 398, (table 3).

[50] Derived from various data series contained in the 1987 Economic Reports of the President.

TALBE 3.7.—MEASURES OF IMPROVED INCOME STATUS OF THE POPULATION, 1947–1985

[In 1985 dollars]

| Calendar year | Per capita disposable income | Median family income | Average gross weekly earnings [1] |
|---|---|---|---|
| 1947 | $5,400 | $14,600 | $217 |
| 1960 | 6,800 | 20,400 | 289 |
| 1985 | 11,800 | 24,580 | 299 |

[1] In private nonagricultural employment.

Perhaps today's workers would be even better off if they did not have to share as much of the fruits of their labors as they do, but it does not appear that on the whole they are expected to get by with less than those who worked 40 years ago. Thus, from this perspective, it could be argued that there is no greater "burden" on today's workers than there was on workers 40 years ago, just a little greater sharing of a larger harvest.[51]

Furthermore, if today's elderly had saved while they worked in anticipation of retiring early (either through individual or institutional means), and those savings were directed toward increasing the nation's ability to produce, then perhaps one can say that today's retirees have prepared society for their early departure from the productive mainstream. In a sense, they already would have produced for their consumption during retirement. From this perspective, the apparent added burden on those who work today would be an illusion.

If, on the other hand, today's retirees did not save more, but only in different forms (in institutional ones, rather than individually), their savings for retirement would not have enhanced the Nation's productive capacity any more than had they been expected to work to the ages their parents did. In other words, to the extent formal saving for retirement simply substituted for society's "inherent frugality," and as such did not cause it to save more than it would have, then those who work today could be seen as shouldering a larger economic burden than those who worked 40 years ago.

There is no definitive answer.

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[51] The growth in income for society as a whole—as reflected in the aforementioned statistics—was so large over the period there is little doubt that it occurred in all age groups. However, income data broken down by age group does not appear to exist for periods prior to the late 1950's. Thus, it could not be determined for this study to what extent the real growth in the incomes of the elderly may have exceeded that of other age groups over the past 40-year period as a whole. It also should be noted that the income levels reflected by these indices have not shown much change since the early 1970s. Most of the growth reflected in the table was for the period prior to 1973.

In this regard it is important to note that at least for the past 2 decades income trends have been very uneven between the elderly and younger segments of the population. A SSA report summarizing Census Bureau findings showed that between 1960 and 1970 the mean income of aged families rose by 24 percent, while that of non-aged families rose by 35 percent. However, between 1970 and 1983, the mean income of aged families rose by 17 percent, while that of non-aged families actually fell slightly (ignoring some small variations from this trend during the intervening years). Similarly, the after-tax income of aged households rose by 6 percent between 1974 and 1983, while that of non-aged households fell by 7 percent. See Reno and Grad, loc. cit.

## VI. IN SUMMARY, DEPENDENCY IS A DIFFICULT CONCEPT TO DEFINE AND MEASURE

There is no conclusive or clearly preferential way to measure the incidence or degree of economic dependency arising from the aging of the U.S. population, nor to state what the changing demographics imply regarding the future demands that will be imposed on the producing segments of society. Age-determined dependency ratios are not economic ones. And the ratio of nonworkers to workers reflects only one of many factors that affect the overall economic well-being of society.

It also is important to recognize that productive contributions to society are made by people outside of the 20–64 age span and by people who are not employed. Is a housewife unproductive if her taking charge of the home and child-rearing means that her husband is able to be employed full time? Or if she donates her spare time to school or community work that would otherwise have to be paid for or go undone? Is an elderly person caring for his or her spouse at home, donating time to charities, or involving him or herself in civic issues being unproductive? Is a child being unproductive when getting an education?

There is little doubt that the changing age structure of the population will affect society's economic well-being. And it appears clear that the resource demands on governmental and private institutions to provide income and other economic support to the elderly will rise significantly as the population ages. Less clear, however, is what can be said about whether and the extent to which these changes will create a "severe" economic burden for society as a whole.

# CHAPTER 4. PREPARING FOR THE RETIREMENT OF THE BABY BOOM: SAVING AND INVESTING*

The demographic trends described in chapter II imply a sharp increase in the retired population in comparison to the workforce beginning about 25 years from now. This chapter is concerned with delineating the role that national saving and investing can play in preparing for the baby boom's retirement years (and beyond). Supplementary policies to raise retirement ages and increase the labor force are considered in other chapters. After some introductory remarks concerning the roles of domestic and foreign investment, a strategy for the timing of investment is presented. This is followed by a summary of the state of knowledge on trends in saving behavior. The chapter concludes with an overview of past trends and future prospects for economic growth.

## I. Strategy for the Baby Boom's Retirement

### A. HOUSEHOLD RETIREMENT PLANNING

National planning for retirement of the baby boom has much in common with individual planning for retirement. Persons planning for retirement would be advised by experts to work backward from their ultimate goals. What level of bequests do they hope to make? What level of income do they seek in their retirement years?

Having determined these goals, the household—given enough time and subject to a number of constraints—can arrange its economic behavior prior to retirement to attain them. These arrangements can usually be divided into two categories: enhancement of household income from productive activity and accumulation of claims on others.

### *1. Income From Production*

Until recent times, the major form of support for retired people was income earned by their children. "Family planning" for retirement meant having enough children—measured by number or by income-earning potential—to support both themselves and their parents. In modern times, a family business can play the same role. During the family's lifetime, its business would be built up and, at retirement, the household would derive income from its continuing profits.

### *2. Claims on Others*

As societies and economies grew more complex, new avenues of support for retirees became possible. During their working lifetimes today, most people accumulate claims against others that can be converted into income during retirement. These claims can take many forms such as pensions, stocks, bonds and other loans, annuity contracts, and other financial assets, as well as such government-provided assets as eligibility for social security (or other public pensions) and entitlement to various forms of in-kind aid (Medicare, for example). The common note in these sources of support is that the retired household itself does not have to be productive during retirment but can convert its stored, past productivity into income during retirement by exercising claims against others.

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*This chapter was prepared by Robert Hartman and Larry Ozanne, Congressional Budget Office.

### *3. The Need to Save*

All these forms of household provisions for retirement require that part of income be withheld from consumption during the working years. Whether people are sending a child to school, plowing earnings back into the haberdashery, or buying bonds—none of these can be done without curtailing personal consumption—that is, without saving.

## B. NATIONAL PLANNING FOR RETIREMENT

Not too much changes when we look at how a nation can prepare for the retirement of some of its citizens, although the demarcation lines (for claims on "others," e.g.) need to be modified. The provision of enough income for the baby boom cohort in its retirement will require saving to fund some combination of net domestic and foreign investment.

### *1. Net Domestic Investment*

One way for the Nation to ease the burden of providing for the baby boom's retirement is to build up the Nation's productive capacity over the next quarter century. By so doing, real GNP (per worker) would be high enough to offset the expected decline in the workforce relative to the retired population, providing adequate real income for both groups.

Certainly a key to the productive capacity of the economy is the amount of private sector capital in the form of factories, equipment, and structures. But a full accounting of the Nation's productive capacity would also make due allowance for the skills of its workforce (human capital) and the aids to commerce that are collectively owned (infrastructure). In the United States these are predominantly financed through the public sector.

### *2. Net Foreign Investment*

Opening up the economy to international trade and capital movements is analogous to allowing the household to go beyond reliance on its children and family-owned business. Specifically the accumulation of foreign assets for the purpose of liquidating them during the baby boom retirement represents a way for the United States to live beyond its domestic productive capacity when it will need it most.[1]

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[1] It goes without saying that translation of the claims on foreigners into imports presupposes a continuation of open markets for trade in goods and services as well as capital movements among nations.

How is this done? The key to understanding the role of the international sector in providing assistance to the baby boom's retirement is to recognize that international trade balances (and their mirror images—international capital movements) allow a nation to consume goods and services at a different time from when it produces them. Thus, when the United States exports more goods than it imports (concomitantly leading U.S. residents to accumulate claims on foreign countries), production exceeds consumption. And when the U.S. imports more than it exports, paying for the excess by decumulating the previously earned claims on foreign countries or accumulating debts to foreigners, it consumes more than it produces.

It follows that one of the ways that the baby boom's retirement can be eased for U.S. residents is to raise the rate of investment abroad—that is, run export surpluses—in advance of that period in the expectation of engaging in foreign disinvestment—an excess of imports—during the baby boom retirement period. This would allow U.S. consumption to exceed productive capacity as its labor force shrinks relative to consumption needs during those years.[2]

### C. PROVIDING FOR FUTURE GENERATIONS

One element of the household's retirement plans—bequests—has been neglected in this discussion of national planning, but it has an important role. United States policy cannot singlemindedly focus on the preparation for and duration of the baby boom retirement years as if there was no concern beyond them. If it could, U.S. policy would be enormously easier: between, say, 2010 and 2030 the United States could just borrow whatever it needs from abroad and forget the consequences. Those consequences, of course, would be that the generations from 2030 on would have to export billions of dollars of U.S. produced goods as foreigners liquidated the claims that were acquired in 2010–30.

As part of the Nation's planning for the baby boom retirement, therefore, it must be kept in mind that a legacy is owed to those who live after 2030 in the form of domestic capital and claims on foreign assets. It is well beyond the scope of this chapter to discuss how big a bequest is desirable. But we can make two observations. One is that the United States population in 2030 will be considerably larger than it is today (25 percent larger under the IIB projections discussed in chapter II). Thus, to leave future generations as well off as today would require a 25 percent increase in capital to keep pace with population growth. Second, for as long as American economic statistics have been able to track it, each generation has left its children a larger capital stock than it inherited.

Suffice it to say, then, that one constraint on U.S. retirement goals for the baby boom is that at the end of their lives, enough capital—meaning private/public, human/physical, domestic and U.S.-owned foreign—should have been left in place to have kept pace with population growth and then some. Thus sufficient saving and investing is needed to accommodate both the baby boom's retirement and the needs of future generations.

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[2] An import surplus during the baby boom retirement years does not necessarily mean importing more Mercedes to Palm Beach. It could mean importing more French diapers thereby releasing workers from the U.S. diaper industry who could be absorbed as caregivers in nursing homes. No one would have to plan such resource reallocations; relative prices in domestic and in foreign exchange markets would guide them.

### D. A TIMING STRATEGY FOR THE BABY BOOM'S RETIREMENT

When should the saving and investment be undertaken? Specifically, consider the period from 1987 to 2010 and the period 2010–30. In projections for the first period, the labor force grows more rapidly than the overall population (though not as rapidly as in the past 20 years), the ratio of those of retired age to the total population grows slowly, and the workforce composition is sharply improving in experience and educational attainment (which usually also means productivity). After 2010, the workforce grows much more slowly than total population, the ratio of retirement-aged people to the total population grows sharply, and the composition of the workforce in terms of experience levels out.

These demographic recountings should make it clear that it is in the earlier period that the bulk of the targeted growth in capital stock should occur if living standards are to be maintained and if internal conflicts are to be minimized. This is easier to see if one imagines that all of the growth in the capital stock were to be in the form of net foreign investment. In that case the demographic trends imply that the optimum timing strategy would be for the pre-2010 period to be devoted to export surpluses (when the labor force is growing relatively rapidly) and then, conversely, for imports to exceed exports during the baby boom retirement years. In the latter period, foreign productive capacity would be used to supplement an American economy in which the demands of a rapidly growing retirement population would otherwise strain available resources. Doing otherwise—running import surpluses now and export surpluses during the baby boom retirement period—is almost certainly a recipe for conflict. Under that strategy, U.S. output in the post-2010 period would have to be divided not only between the workforce (and its children) and the growing retired cohort but also by foreigners whose export demands would have to be satisfied.[3] Thus, under the optimum strategy, to the extent possible, national policy should tilt toward—or at least not deter—a high investment economy in the period from now to 2010. This means an economy with high total saving as well and this is the obvious cost and limitation on an all-out devotion to this effort. The strategy outlined here necessarily means deferring some consumption (either private or public) over the next quarter century. This can be done through higher voluntary saving by individuals or collective saving through higher taxation or reduced government consumption. Such savings would store resources in the form of human or business capital, infrastructure or claims on foreigners to be realized when the baby boom retires.

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[3] The only circumstance in which it would be advantageous to borrow from abroad in the early period would be if investment opportunities in the United States were unusually high in the immediate period and if domestic savings were unavailable. In that case, early borrowing from abroad would help sustain domestic investment and, if the return is high enough in added capacity, more than pay for the exports later needed to meet the accumulated claims of foreigners. In this case as well as the one highlighted in the text, net investment (here domestic) is kept high in the pre-baby boom retirement period.

## E. PROSPECTS FOR HIGH SAVING, INVESTMENT, AND GROWTH

Instead of building up wealth more rapidly in preparation for the baby boom's retirement, the United States has been moving in the opposite direction. Some signs of a moderation or reversal exist, but there is no assurance they will be sufficient to reach historical rates of accumulation and economic growth, much less exceed them, without further policy intervention.

In recent years the United States saving rate has been declining, productivity growth has slowed markedly from the early post-war period, and the United States has become a net borrower from abroad. Total United States saving—that of individuals, businesses, and governments—remained stable relative to the size of the economy during the 1950s, 1960s and 1970s. Since 1980, however, there has been a sharp deterioration (see table 4.1). The predominant source of the lower saving rate has been the sharp increase in the Federal deficit.[4] The decline in saving has necessitated a decline in investment. The decline in domestic investment has been less dramatic than the decline in saving, while the decline in our investment abroad has been greater. Whereas in 1960s and 1970s the United States was accumulating assests abroad (positive amounts for foreign investment in table 4.1) this has sharply turned around in the 1980s; the United States is currently borrowing abroad.

Projecting future saving, investment, and economic growth is notoriously difficult, but some signs point to a moderation or reversal of recent trends. The saving rate may recover some in the near term now that the Federal deficit has stabilized and targets for deficit reduction are being pursued. (However, the size of those deficits and the likely paths of reduction mean that over the 1987–1992 years the Federal budget will—compared to post-war averages—be draining from rather than adding to saving for the baby boom's retirement.) Over the longer run, private saving may be modestly boosted as the baby boom moves into the life stage at which savings rates are highest. Productivity growth may also rise partially back to its post-war average as many of the factors contributing to the past slowdown are reversed. Finally, increased saving in the United States should reduce borrowing abroad and facilitate the buildup of claims abroad. The Japanese particularly (and West Germans to a lesser extent) will undergo a huge increase in the ratio of elderly to workingage population 10 to 20 years before the United States which should reduce their saving and increase their imports, thereby helping U.S. exports and our building up of claims abroad. (The imminent retirement booms in Japan and Germany may help explain their current build-up of exports and claims abroad.)

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[4] The aggregation of savings by decades and into only two components masks some trends that are discussed in the following section on savings.

## TABLE 4.1.—TRENDS IN U.S. SAVINGS AND INVESTMENT, 1950–86 (SAVING AND INVESTMENT AS PERCENTS OF NET NATIONAL PRODUCT)

| Years | Net private and State/local saving [1] | Federal surplus deficit [2] | Total net U.S. saving [3] | Net private domestic investment | Net foreign investment |
|---|---|---|---|---|---|
| 1950–59 | 8.0 | 0 | 8.0 | 8.1 | 0.2 |
| 1960–69 | 8.9 | −.3 | 8.6 | 7.8 | .6 |
| 1970–79 | 9.8 | −1.9 | 7.9 | 7.7 | .2 |
| 1980–86 | 8.4 | −4.7 | 3.7 | 5.4 | −1.7 |
| 1986 | 7.6 | −5.4 | 2.2 | 6.1 | −3.8 |

[1] State and local government saving is primarily surpluses in employee pension funds.

[2] Deficits are negative amounts.

[3] As defined in the National Income Accounts, total net saving (column 3) equals private net domestic investment (column 4) plus net foreign investment (column 5) except for statistical discrepancies.

Source: National Income and Product Accounts data compiled by Congressional Budget office.

These anticipated changes probably will not generate the rates of saving and productivity growth needed to prepare for the baby boom's retirement. Thus, policies to increase rates of saving and productivity growth may be of interest. The remainder of this chapter reviews past trends in saving and economic growth, considers prospects for the future, and assesses past policies to alter savings.

## II. THE SAVING RATE: PAST EXPERIENCE AND FUTURE PROSPECTS

From the late 1940s until the 1970s the United States saving rate remained stable except for fluctuations with the business cycle. Since the mid-1970s, however, the saving rate has fallen substantially. The largest component of that decline is increased Federal borrowing, although private saving has also declined. During the entire post-war period the saving rate has responded quickly and substantially to changes in the Federal deficit. Other major changes that might have been expected to cause large shifts in saving apparently have had minor effects, such as the expansion of Social Security and employer pensions and changes in the rate of return on saving. Consequently, prospects for increases in the saving rate seem to depend most heavily on reductions in the Federal deficit. The baby boom's movement through middle age may also lift the U.S. saving rate over the next 20 years.

This discussion begins with a review of post-war trends in the U.S. saving rate and its major components. It then reports on events since World War II that might have been expected to influence personal saving.

### A. TRENDS IN UNITED STATES NET SAVING

What is measured as U.S. net saving is the domestic funds available each year for investment in private capital formation. This saving is net of that needed to replace depreciating assets, so it is saving available for new investment. Saving by individuals, called personal saving, is the largest component followed by corporate savings as measured by retained earnings—that is, profits not paid out in dividends. Surpluses or deficits of governments are included because deficits are financed by the sale of bonds which absorbs private saving and leaves less for private investment. By the same token, government surpluses make saving available for private investment by retiring public debt or directly as when State and local government pension funds invest in corporate securities. Thus the total U.S. saving rate can be thought of as having four main components: personal saving, corporate saving, the Federal Government's surplus or deficit, and State and local governments' surpluses or deficits. Trends in each of these components are examined below. In this examination saving is measured as a rate of saving out of net national product [5] using National Income and Produce Account (NIPA) data.

### *1. Total Saving and the Federal Budget*

The total U.S. saving rate has averaged 7 to 8 percent of net national product since World War II; in particular years, the rate has surpassed 12 percent and fallen nearly to 2 percent. Most of the fluctuations have been associated with exceptionally large surpluses or deficits of the Federal Government (see figure 4.1), and the swings in the Federal budget have mostly coincided with the business cycle. Thus the recessions in 1949, 1953–54, 1957–58, 1974–75, and 1981–82 led to sharp increases in Federal deficits and consequent declines in the U.S. saving rate in those years. Similarly, economic upturns starting in 1947–48 and again in the early 1950s led to sizeable budget surpluses and upswings in total U.S. saving. The economic upswing from 1975 through 1979 reduced the Federal deficit and also led to an upswing in total saving although the budget remained in deficit. Only the upswing in total saving that occurred in the mid 1960s is not associated with fluctuations in the Federal deficit.

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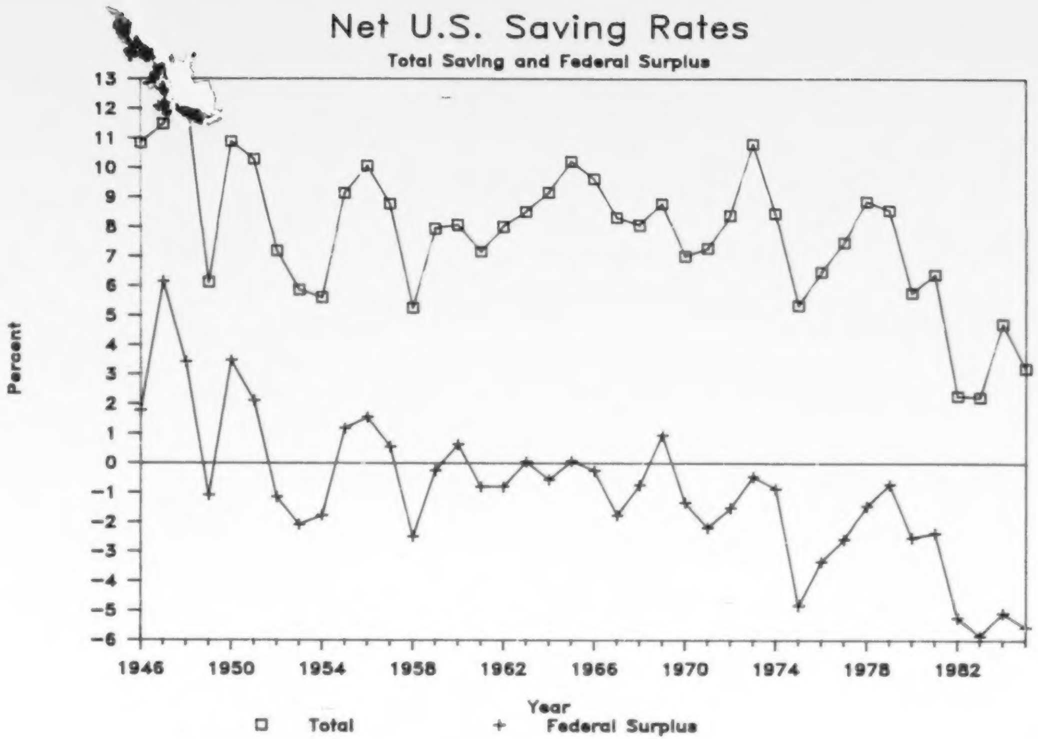
[5] Net national product equals gross national product less depreciation on private capital.

Figure 4.1.



Source: U.S. Department of Commerce National
Income and Product Accounts, 1986.

The Federal budget has been in deficit since 1969, and since 1983 for the first time in the post-war era the large deficits associated with a recession have not been reduced significantly by the subsequent recovery. The deficits have been associated with a decline in saving since the early 1970s and particularly since 1982 (figure 4.1). The failure of the deficit to swing sharply back towards balance with the economic recovery since 1982 is due largely to the enactment of tax cuts and tax indexing in 1981 without similar reductions in spending. High interest rates also contributed. The Balanced Budget and Emergency Deficit Control Act of 1985 legislated that deficits be reduced progressively to zero by 1991, but experience since then suggests that deficit reduction will be more drawn out. A large reduction in the deficit would be likely to raise U.S. saving significantly, while continued deficits would seem to continue to depress total saving.[6]

### *2. State and Local Budget Balance*

The budget behavior of State and local governments has been substantially different from the Federal Government's. As shown in figure 4.2, the total surplus or deficit of all State and local governments stayed well below one percent of net national product until the 1970s and since then a surplus has steadily risen, reaching almost 2 percent in 1985.[7]

The growing surplus of State and local governments is due to their buildup of social insurance trust funds, nearly all of which is in pension funds for State and local employees' retirement. Data on the size of these trust funds is available only since 1958, but it shows a steady upward trend since then (see figure 4.2). Total State and local surpluses and deficits have fluctuated around the rising surplus in the trust funds, showing that State and local governments have continued to keep operating budgets near balance in spite of the build up in social insurance funds.

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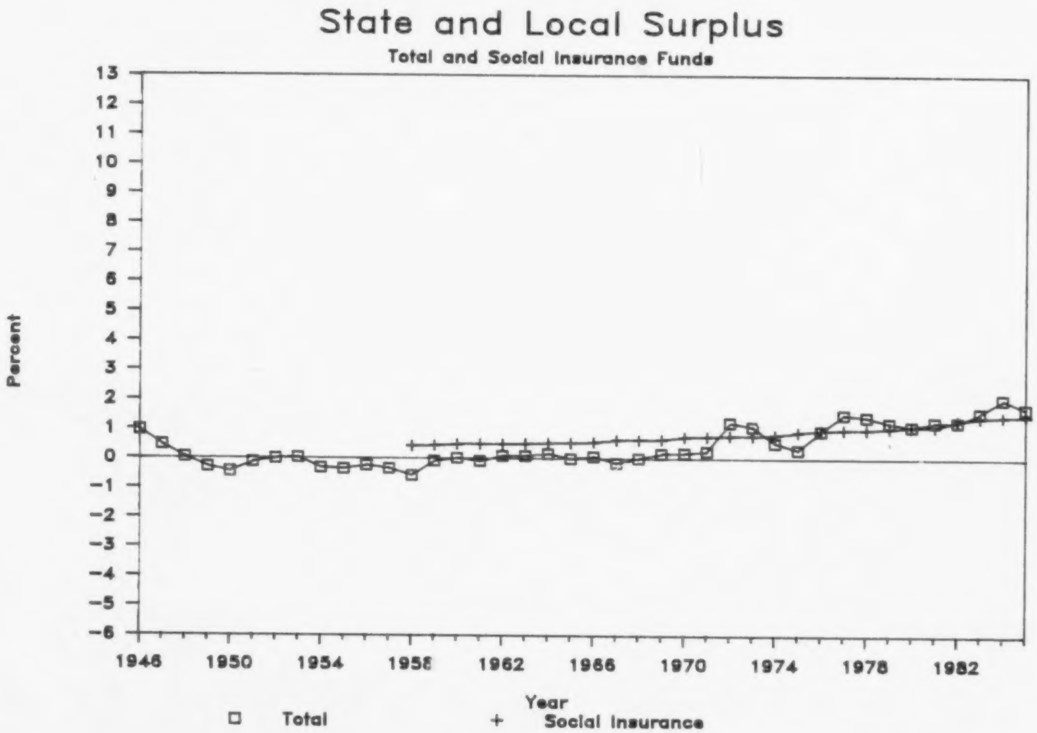
[6] Some analysts have suggested that increases in the Federal deficit would cause people to increase their personal saving in anticipation of the higher taxes that would be necessary in the future to pay off the higher debt. If people followed this course, an increase in the Federal deficit would not lower total saving, nor would a reduction in the deficit raise total saving. The failure of personal saving to rise since 1982 in response to the unprecedented Federal deficits of these years has cast serious doubt on this hypothesis. For further discussion see James M. Poterba and Lawrence H. Summers. Recent U.S. Evidence on Budget Deficits and National Saving. National Bureau of Economic Research Working Paper, no. 2144, Feb. 1987.

[7] The surpluses and deficits of State and local Governments fluctuate with the business cycles of the economy, but the size of the fluctuations are much smaller than those of the Federal Government. State and local Governments, some of whom are constrained by balanced budget laws, have responded quickly to recessions by raising taxes and holding down spending to reduce deficits, and they have reversed course during prosperity. The Federal Government, instead, has used its budget as a counter-cyclical weapon, even augmenting the tendency for the deficit to increase in a recession by voting additional spending and tax reductions. State and local budgets have also fluctuated less than the Federal deficit over the business cycle because their outlays and revenues are less sensitive to economic fluctuations. Moreover, the total of their budgets is smaller than the Federal budget. Total State and local budgets have fluctuated between half and two-thirds of the Federal budget on a NIPA basis (which counts Federal grants that support State and local government spending only as spending for State and local governments).

Figure 4.2.



Source: U.S. Department of Commerce National Income and Product Accounts, 1986.

Because the State and local budget surpluses represent retirement saving for their employees, their surpluses are likely to continue rising until the baby boom retires. Public plans are less than fully funded in most cases, however, and increased funding by State and local governments could increase national savings. Because State and local governments have tended to keep their operating accounts in balance, they are unlikely to offset any increased pension contributions with greater deficits in other accounts. Their employees would also be unlikely to offset this increased saving with less saving of their own because the increased funding would not be providing increased benefits.

The possibility of raising a budget surplus to fund future retirements can be extended to Social Security. From now through the first decade or two of the next century the Social Security Old Age, Survivors, and Disability trust funds are scheduled to operate with surplus receipts. If the surpluses are not offset by higher deficits elsewhere on Federal accounts, they will raise national saving, investment, and economic growth which will ease the burden of supporting the baby boom's retirement. However, if the surpluses are offset by other Federal deficits, no increase in saving will have occurred. In effect, the payroll tax will be funding other spending by the Federal Government.

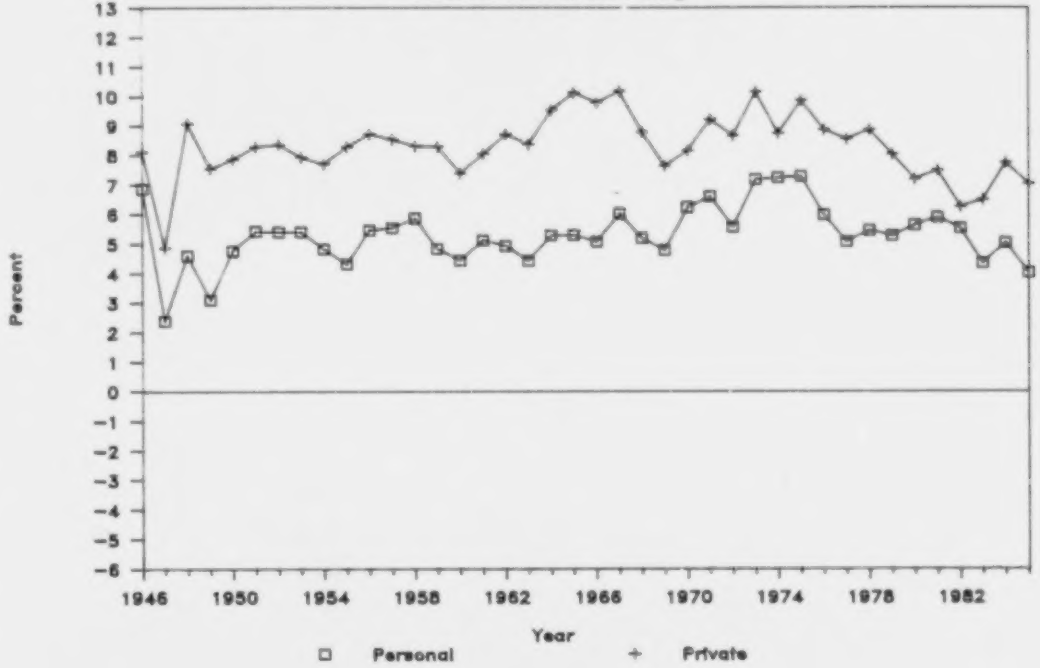
### *3. Private Saving*

Like the surpluses and deficits of State and local governments, private savings has been stable compared to the large fluctuations in the Federal surplus or deficit. For most of the post-war era, the private saving rate has been in a narrow range between 7 and 10 percent of net national product, largely due to the stability of its major component, personal saving. The top line in figure 4.3 shows private saving and the lower one shows personal saving; the difference is corporate saving (retained earnings). Offsetting changes in the personal saving rate and the corporate saving rate over the business cycle have also moderated fluctuations in private savings. In a recession individuals tend to save more causing the personal saving rate to rise whereas retained earnings of corporations fall, causing an offsetting decline in corporate saving.

Figure 4.3.

Net U.S. Saving Rates

Personal and Private Saving



Source: U.S. Department of Commerce National Income and Product Accounts, 1986.

Although the private saving rate has changed relatively little since World War II, it showed a slight upward trend from 1950 through the late 1960s or early 1970s, and a slight downward trend since then. The decline has exceeded the earlier upswing, leaving the private saving rate since 1982 at the bottom of its usual post-war range. The post-war trend in private saving is followed by both personal and corporate saving, although the decline in corporate saving started in the late 1960s while personal saving remained high until the mid-1970s.

The modest changes in private saving suggest that prospects for change in the future are limited. A more detailed review of past events and policies, however, evidences some potential for change. The pattern of corporate savings is examined first, and then personal saving is explored in greater detail subsequently.

The decline since 1969 in corporate saving relative to net national product can be attributed most directly to the decline in corporate profits as a share of net national product. After all, corporate saving is just the profits that corporations do not pay out in dividends. Corporate profits suffered in the 1970s from inflation and in the 1980s from high real interest rates. Corporate profits had shown a slight downward trend from the late 1940s through the late 1960s in addition to the sharp decline in the 1970s. This longer trend partly reflects a shift in the mix of corporate finance from equity to debt, so that the decline in retained earnings is partly a reflection of decisions to finance more new investment with borrowed funds. The longer trend also reflects a shift toward wage income and a decline in business income. These influences lowering corporate profits have all put downward pressure on retained earnings. Interestingly, corporations have not reduced corporate savings in proportion to the decline in profits, choosing instead to cut dividends disproportionately.

The prospects for corporate saving are unclear. In the near term, corporate profits are projected to recover further as the economic expansion continues, inflation remains moderate, and interest rates fall. Higher profits should raise corporate saving, although higher taxes imposed by the Tax Reform Act of 1986 will absorb some of these projected profits. Over the longer term it is impossible to project with any reliability whether economic conditions will favor corporate profits. Longer run effects of the Tax Reform Act on the debt-equity ratio and the size of the corporate sector are uncertain as well.

Long term changes in the corporate saving rate do not necessarily cause a change in total private saving. Higher interest rates or a shift to greater debt financing transfer capital income from corporations to the individuals who buy bonds and save in financial institutions. These individuals may save as high a proportion of their interst payments as corporations do of their profits. In some cases, trends in corporate saving may just reflect changes in the place individuals choose to save rather than in the level of their saving. In any event, trends in corporate saving need to be considered along with trends in personal saving, and the following section reviews the major influences on personal saving since World War II.

## B. INFLUENCES ON PERSONAL SAVING

Personal saving has remained relatively stable in the post-War era in spite of many influences which might have been expected to change it substantially. Chief among these influences are the birth and aging of the baby boom generation, the enrichment of Social Security benefits, the spread of employer pensions and related savings incentives, and changes in the effective rate of return. While none of these influences appears to have had a dramatic effect, some may have had smaller or more subtle influences that portend future changes or carry useful implications for future policies to alter saving. Each of these influences is examined here, along with the influence of recent capital gains. The overriding conclusion is that personal saving cannot be expected to change dramatically in response to policies and events like those in our recent past. Smaller changes are possible, though, due to the aging of the baby boom, and, possibly, in response to policy changes as well.

### *1. The Baby Boom Generation*

The major upsurge in births between World War II and the early 1960s could have had as major an influence on saving as it has had on many other aspects of the economy. In fact, the trends in the personal saving rate since World War II, modest as they are, may reflect the baby boom's effect, and may portend future changes as well.

People tend to save at low rates early in their work years as they start families, and borrow to buy homes, cars, and major durables. Later in their working years people repay debts and begin to accumulate assets for retirement and bequests. By the late 1960s and early 1970s many parents of the baby boom generation had reached the latter halves of their work careers when people begin saving at higher rates. At the same time, many of their children delayed the start of their families. This may account for some of the upswing in personal saving through the early 1970s. Then when the baby-boomers did start families, and made the purchases that this entails, they may have caused the saving rate to fall. Limited evidence for this life-cycle explanation of the trend in personal saving comes from an alternative measure of saving collected by the Federal Reserve Board. This "flow of funds" measure includes the purchase of major comsumer durables as saving, and it has shown less of a decline in personal saving in the last few years, suggesting that part of the recent decline in personal saving is caused by the purchase of major consumer durables.[8]

If the modest trends in personal saving reflect the life-cycle of the baby boom generation, then the saving rate could rise from the late 1980s until the first wave of the baby boom retires beginning in the first decade of the next century. This normal pattern of saving for one's own retirement could fund much of the baby boom's retirement. On the other hand, some observers wonder if the slow earnings growth of the baby boom generation along with their delayed start of families may mean that they will fail to accumulate as much in retirement savings as they will need to maintain their current life style and current retirement ages.

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[8] So long as consumer durables ae considered investments, any decline in measured saving because of their purchase is just a statisical aberration. The purchase of the durable in this case is both saving and investment. For a review of the flow of funds measure of saving see Personal Saving: Not So Low After All, Morgan Economic Quarterly, Sept. 1986, p. 13-16.

### *2. Social Security*

The major expansion of Social Security benefits since World War II might be expected to have reduced personal saving. Social Security, enacted in 1935, paid only small retirement benefits until a series of changes starting in 1950 and continuing through the early 1970s. By today, Social Security benefits replace close to 40 percent of the average worker's pre-retirement income. With this much retirement income provided by Social Security, workers might be thought to reduce their personal saving for retirement. Furthermore, since Social Security has not been funded in advance, any reduced personal saving by individuals would mean lower total saving.

Extensive studies of personal saving in the aggregate and in comparison among individuals have been conducted to determine whether Social Security has led to this expected reduction in personal saving. The studies have been unable to reach any consensus.[9] Apparently Social Security also tends to raise saving and the net effect has not been sorted out. Social Security may have stimulated saving by making earlier retirement possible. The need to supplement the partial replacement of earnings provided by Social Security could have caused people to raise their savings. Another possibility is that persons have kept up their savings in spite of Social Security so they could pass along larger bequests.[10]

### *3. Employer Pensions*

In contrast to Social Security, the spread of advance-funded pensions might be expected to have raised personal saving. Pension assets grew from just over $10 billion in 1950 to almost $1 trillion in 1985 as pensions grew from covering a few thousand employees at the outset in World War II to covering about half of all workers today.

In theory, pensions do not necessarily increase saving because the growth of pension funds could be offset by declines in other personal saving. Individuals might simply shift saving they would otherwise have done to employer plans. Pensions do have special features that could alter workers' savings, but these features could either increase or decrease saving. The tax advantages, which are like those for IRAs, could lead workers to save more because saving is a better deal, or they could lead them to save less because less saving is needed to reach their retirement targets.[11] Aside from the tax advantages, pensions could force additional saving from those disinclined to save. Participation is mandatory for most employees once an employer initiates a plan, and workers without much saving of their own would be unable to offset pension accruals by dissaving other funds. Additional features of pensions, such as early retirement incentives, uncertain benefits, and favorable annuity prices could on net raise or lower worker saving.

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[9] Aaron, Henry J. Economic Effects of Social Security, (Washington, D.C.: The Brookings Institution 1982), p. 40–52.

[10] It seems reasonable that at some point further expansion of Social Security would begin to reduce personal saving but the effect on total saving would depend on any offsetting steps that might be taken with the Federal deficit.

[11] See chapter 9 for an analysis of how tax advantages alter saving.

Detailed studies of wealth and saving by older and higher-paid workers have found that pension participants have greater wealth than their counterparts without pensions. More precisely, these pension participants have been found to have smaller amounts of non-pension wealth and saving, but when their pension wealth is included, the total is higher. Recent studies estimate that for each dollar of pension wealth these workers reduce their non-pension wealth by 60 to 70 cents, leaving their total wealth 30 to 40 cents higher per dollar of pension wealth.[12] Thus, about two-thirds of the growth of pension assets among older and higher-paid workers is being offset by reductions in personally held savings.

Studies have not paid as much attention to younger and lower-paid workers, but pensions could have a significant impact on their saving as well. The 1983 Survey of Consumer Finances has found that over a quarter of U.S. households have less than $3,300 in net worth. The pension participants among these would not have enough other saving to offset mandatory pension saving and, because of low incomes as well as low assets, they could not borrow much either.

The trend in the pension saving rate shown in figure 4.4 suggests that pensions may well have contributed to the modest increase in personal saving through the mid-1970s. However, other influences on personal saving appear to have overwhelmed the effect of pensions since then. The lower line in Figure 4.4 is the saving rate in pensions.[13] The higher line is personal saving rate, which includes pension saving.[14] As the figure shows, the rate of saving in pensions has risen very steadily in the post-war era from 1 percent to 4 percent of net national product. (The downturn in 1983 and 1984 reflected an exceptional downward shift in funding targets due to the decline in interest rates in those years and the rapid escalation of stock prices in 1982.) The upward trend in pension saving is mirrored in the generally upward trend in personal saving through 1974. However, from 1975 through 1983 pension saving continues its upward march while personal saving declines or holds steady. Any increase in personal saving caused by pensions has been offset by other influences since 1975.

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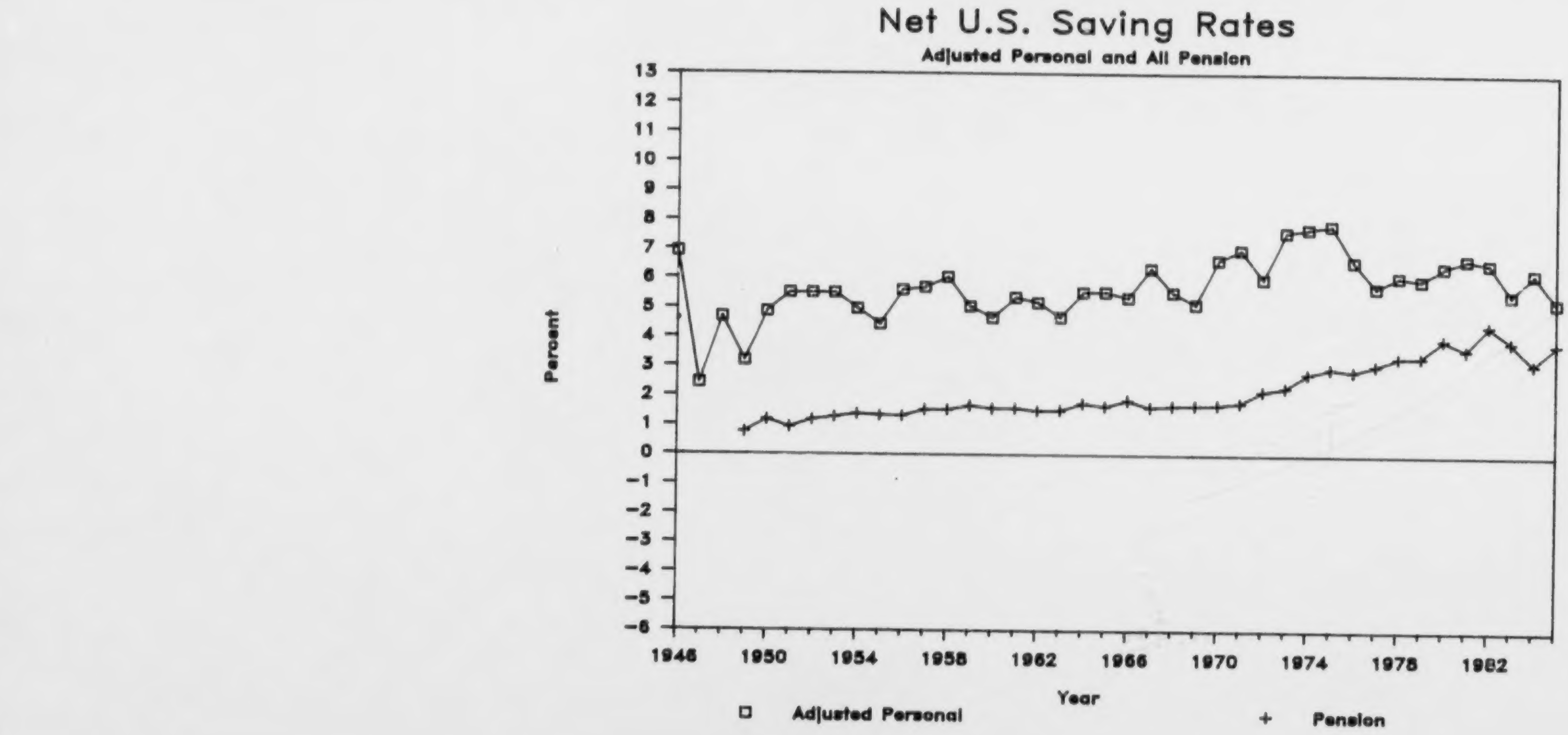
[12] Munnell, Alicia H. The Impact of Public and Private Pension Schemes on Saving and Capital Formation, in International Social Security Association, Conjugating Public and Private: The Case of Pensions (Geneva: ISSA, 1987) p. 230-232. For further discussion see The Congressional Budget Office. Tax Policy for Pensions and Other Retirement Saving, pp. 79-87.

[13] The pension saving rate includes private employer and State and local government pension funds. Pension saving is measured as the chagne in assets of private pension funds, pension accounts held by insurance companies, and State and local government pension funds. These data are taken from the Flow of Funds data compiled by the Board of Governors of the Federal Reserve System.

[14] The NIPA data include pension saving of private employers in personal saving but leave pension saving in State and local government funds in the net budget surplus of State and local governments, as discussed above. In figure 4, the pension saving of State and local governments has been added to personal saving because pension saving is probably viewed the same by workers whether they are publicly or privately employed. Adding the State and local governments' pension fund saving to the NIPA personal saving rate shifts the adjusted personal saving rate in figure 4 above the NIPA personal saving rate shown in figure 3 by the amount of the growing surplus in State and local pension funds shown generally in figure 2. One explanation for the decline in personal saving as measured in the NIPA data is that a portion of personal saving is being shifted to State and local pension funds. Inclusion of that saving in personal saving, as is done in figure 4, lessens slightly the decline in personal saving that has occurred since 1974, but does not change its pattern.

Figure 4.4.



Net U.S. Saving Rates

Adjusted Personal and All Pension

Source: U.S. Department of Commerce National Income and Product Accounts, 1986.

Because pensions have been found to raise saving, an expansion of pensions in the future could be expected to raise saving. Pensions have largely stopped growing however, so further policy changes might be necessary that encourage or require additional pension coverage.[15] While such policies could raise saving by the baby boom generation, they could also encourage the baby boom to retire earlier and expect a higher living standard in retirement. Thus this greater saving might raise the expectations for the baby boom's retirement rather than reduce the burden of supporting it.

### *4. IRAs and Salary Reduction Agreements*

IRAs offer individuals the tax advantages found in employer pensions but not the institutional constraints of those plans. In 1982, when IRAs became available to persons already participating in a pension, contributions to IRAs mushroomed. Two initial evaluations of IRAs have concluded that IRAs do increase saving.[16] However, in both cases the saving increase was found to be independent of a contributor's tax rate, which suggests that the tax incentive may not have been the primary motivation to save. The authors of the studies speculate that the strong advertising for IRAs by financial institutions in 1982 and 1983 may have spurred many to contribute who would not normally have done so. If advertising was the primary cause, the incentive itself may not have as large a long-term effect. Further study is needed to determine the long-term saving effect and validate the short-term effects found in the initial studies. The limitations on deducting IRA contributions imposed in the Tax Reduction Act of 1986 will lessen any impact IRAs have had on saving.

Salary reduction arrangements, most commonly in the form of 401(k) plans occupy an intermediate position between pensions and IRAs. Contributions are voluntary as with IRAs, but employers who sponsor plans are constrained to ensure that contributions by the highly compensated do not exceed those of other employees under the plan by more than specified amounts. As a result, employers often make matching contributions to elicit greater contributions from the non-highly compensated than such workers normally would make. Salary reduction plans are too new for their effect on savings to have been quantified; however, they do seem to be more successful than IRAs at securing contributions from younger and lower paid employees.[17] Still, their effect on saving may fall short of that for traditional pensions which have mandatory participation rules. In fact, if IRAs and salary reduction plans spread at the expense of traditional employer pensions, saving might be reduced.[18]

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[15] See chapter 9 for further discussion of current pension coverage and future prospects.

[16] The two studies were both conducted by Steven F. Venti and David A. Wise and released as working papers from the National Bureau of Economic Research, Cambridge, MA. The first is IRAs and Savings, Working Paper No. 1879, April 1986. It found that the contribution would come 50 percent from increased saving, 35 percent from reduced taxes, and 15 percent from the shifting of liquid assets to IRAs. The second study is Have IRAs Increased U.S. Saving?: Evidence from the Consumer Expenditure Survey, Working Paper No. 2217, April 1987. It uses alternative data and reaches the same general conclusion.

[17] U.S. Congressional Budget Office. The Tax Advantage of Pensions and Other Retirement Saving, 1986, p. 63.

### *5. General Changes in the Rate of Return on Saving*

Changes in inflation, interest rates, and tax rates change the effective rate of return [19] for nearly all personal and corporate saving. Such changes, therefore, could affect the level of nearly all private saving in the same way that the tax advantages for qualified employer plans and IRAs affect retirement saving. As noted in the discussion of IRAs, however, changes in the rate of return have an uncertain effect on saving. The uncertain effect is illustrated by events since the 1970s. The personal saving rate has declined from the mid-1970s through 1985 in spite of big swings in the effective interest rate. First, the effective interest rate declined during the 1970s as inflation both rose faster than interest rates and pushed persons into higher tax brackets. Then in 1982, the effective interest rate rose to a post-war high and has remained historically high since. The increase resulted from declining inflation, high interest rates relative to growth in net national product, and tax rate reductions enacted in 1981. The continued decline in the personal saving rate during these swings in the effective return shows the difficulty of establishing any link between the rate of return and saving, and also suggests that if a link exists, it is not of overwhelming importance. The difficulty of finding any relation between saving and the rate of return, as illustrated here, has been found in repeated econometric studies as well. The general conclusion is that existing data are inadequate to support a definitive finding.[20]

### *6. Capital Gains*

The decline in personal saving since the mid 1970s has been attributed by some to capital gains on existing assets. House values rose rapidly in the 1970s and stock prices have risen rapidly since 1982. If these increases made people feel wealthier, they would have less need to save and more reason to increase current consumption. This could account for some of the decline in the personal saving rate since 1974. However, the reasoning is somewhat limited because stock prices fell dramatically in the 1970s while house prices were rising, and then house prices stayed steady or declined in the early 1980s while stock prices soared. Even when capital gains is included as saving, the saving rate in the 1980s is below rates of earlier decades, although saving is up in the late 1970s.[21]

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[18] Salary reduction plans are spreading rapidly. Over one-quarter of the employees at medium and large employers were offered 401(k) plans in 1985 and in 1987 the Federal Government is extending salary reduction to its 3 million civilian employees. Salary reduction is also allowed for non-profit and for public sector employees.

[19] The effective rate of return means the after-tax rate of return in dollars of constant purchasing power.

[20] See for example, King, Mervyn. The Economics of Saving: A Survey of Recent Contributions. [In] Arrow, Kenneth J. and Seppo Honkapohja, eds. Frontiers of Economics. Basil Blackwell (Oxford: 1986), p. 271-276. For a less technical discussion see McLure, Charles E. Jr. Taxes, Saving, and Welfare: Theory and Evidence. National Tax Journal, Sept. 1980. p. 311-320.

[21] Poterba and Summers, Recent Evidence. . . . p. 8 and table. 2

### C. OVERVIEW OF SAVING

The U.S. saving rate rises and falls sharply with increases and decreases in the Federal deficit. Throughout most of the post-war period these fluctuations have been short lived, reflecting the effect of the business cycle on Federal revenues. However, the surge in Federal deficits since 1982 has persisted through the recovery and is causing a longer-term lowering of the U.S. saving rate. Private saving has been comparatively stable since World War II but a decline since the mid 1970s is aggravating the decline caused by growing Federal deficits. The relative stability of personal saving has persisted in spite of the birth and growing up of the baby boom generation, the enrichment of Social Security benefits, the spread of employer pensions and IRAs, and swings in inflation, interest rates, and tax rates. While none of these events has caused major changes in personal saving, the baby boom generation, pensions, and changes in the effective rate of return may have had modest influences on the saving rate. Future saving appears most likely to be increased by reductions in the Federal deficit. The aging of the baby boom may also raise future saving modestly. Policies to increase saving will probably have only small effects, and some, such as expanded pension coverage, could raise expectations for retirement living standards as much as they reduce the burden of providing for existing standards and for future generations. Stable economic growth would probably contribute most to increased saving through the corporate sector.

## III. ECONOMIC GROWTH: PAST EXPERIENCE AND FUTURE PROSPECTS [22]

The ultimate objectives of increased saving are improved U.S. productive capacity and increased claims abroad, both of which can ease the burden of supporting the baby boom's retirement and providing wealth for future generations. Improved U.S. productive capacity, that is economic growth, will be the main source of greater wealth for Americans, and that growth has been a source of concern since the mid-1970s. Prospects for the future are mixed but more positive than in the recent past. Furthermore, the Federal Government could pursue additional policies to increase growth, such as reducing the deficit to raise saving.[23]

### A. SLOWER GROWTH SINCE THE 1970S

U.S. economic growth slowed beginning around 1973. Real Gross National Product (GNP) grew at an average rate of 3.7 percent from 1948 to 1973, but only at a 2.3 percent rate from 1973 to 1985—a slowdown of more than one-third or almost one-and-a-half percentage points. The slowdown appears to be attributable to a slowdown in labor productivity growth (growth in output per hour).

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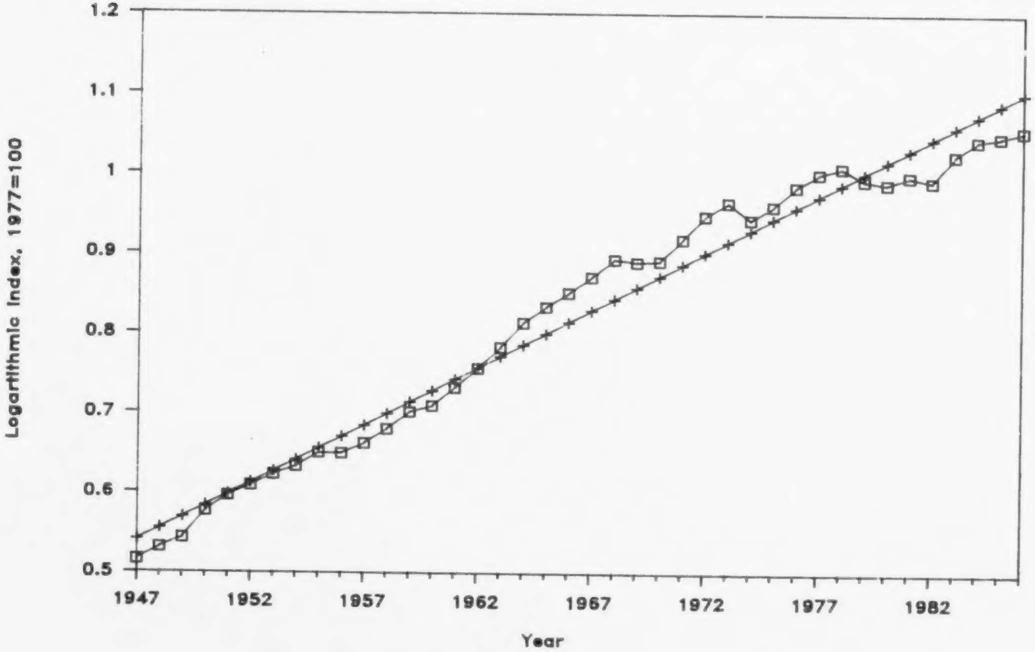
[22] The material in this section was largely excerpted from the Congressional Budget Office. The Economic and Budget Outlook: 1988–1992 (Jan. 1987), p. 80, 83–85, and 90–91.

[23] The ability to build up claims abroad is influenced by many factors beyond increased saving. Among these are greater integration of national economies through freer trade and capital movements and, more broadly, greater stabilty of political systems throughout the world. These factors lie outside the scope of this paper.

That growth slowed in the late 1960s and virtually ceased in much of the 1970s (see figure 4.5). In the 1980s, productivity appears to have revived considerably in manufacturing and farming but not in the services sector.

Figure 4.5.

Business Productivity and its Trend



Source: U.S. Department of Commerce National Income and Product Accounts, 1986.

Research has identified several factors that are believed to have contributed to the slowdown in productivity growth. The relative importance of these factors has not been settled.

—The labor force grew exceptionally rapidly with the entry of the baby boom into the labor force and the increased participation of women in the labor force. The new entrants reduced the average level of experience and training of the labor force. Furthermore, their rapid entry outstripped the rate of capital formation, slowing growth in the amount of capital each worker has to work with.

—The shift of labor from the low-productivity farm sector slowed markedly after the mid 1960s because the transition to a mainly nonfarm economy had been largely completed. In addition, the share of total output in the service sector has grown. Productivity in services seems to be lower than in other sectors, and subject to the more under-estimation.

—Energy prices rose extremely rapidly in the mid-1970s and again in the late 1970s. Among other effects, the rise in energy prices may have caused substantial amounts of existing capital to become obsolete.

—The economy experienced prolonged periods of high unemployment and low use of capacity. Some economists believe that such conditions have a relatively long-lasting negative effect on productivity and economic growth.

—The high inflation of the 1970s may have had a damping effect on productivity growth. Some analysts believe that during inflationary periods the efficiency of markets in allocating resources may be impaired, partly because of the interaction between inflation and the tax system. Inflation also contributes to greater uncertainty among decisionmakers, which may slow investment and innovation.

—The exchange value of the dollar and the foreign trade balance have fluctuated very widely. One result may be the loss of high-productivity jobs in such sectors as machine tools and primary metal manufacturing.

—Public investment in physical capital and spending on research and development slowed beginning in the late 1960s.

—Government regulations grew in scope and degree, particularly those concerning the environment, occupational health and safety, and employment opportunity. The new regulations created red tape for business and diverted the attention of management from productivity-enhancing areas. In some cases, the regulations required major investment—for instance, scrubbers for electric utilities. However the impact on productivity of such regulations is perhaps more usefully viewed as a problem in the measurement of output. Measured output does not include, for example, clean air and water or occupational health and safety.

### B. THE OUTLOOK FOR PRODUCTIVITY

Many of the factors that are believed to have contributed to the slowdown in productivity have reversed in recent years, or at least moderated. The baby boom generation of 15 years ago is now swelling the ranks of the more experienced workers, and the number of teenagers has been falling. Correspondingly, the labor force is growing less rapidly, which should help to push up the amount of capital per worker. Government regulations have in some respects been eased, and at any rate are not being introduced as fast as in the earlier period. Industrial research and development as a percent of GNP has surged to new highs. Oil prices began plunging late in 1985. Labor and management have put more emphasis on increasing productivity. The Tax Reform Act of 1986 has reduced marginal tax rates on individuals, which should encourage work, and has done much to equalize taxes on different kinds of business capital, which should contribute to greater efficiency for any given size of the capital stock. (These gains from tax reform will be offset to some extent by the higher taxes on income from capital which should discourage investment.) These new conditions have caused some analysts to expect a major rebound in the performance of productivity. Actual productivity performance in recent years, however, suggests little cause for optimism, particularly in the services sector. The effect of the changes on productivity may simply have not shown up yet.

Not all factors favor more rapid growth in productivity in the next few years. Business fixed investment grew very rapidly in the first two years of the current expansion but has not grown rapidly in the last two years. The near-term outlook is not very positive either. Among the reasons are low use of capacity, less favorable tax treatment for new investment in tax reform, and problems in the energy sector.

### C. FEDERAL POLICIES TO ACCELERATE PRODUCTIVITY

Governmental policies can effect growth in productivity, but whether they can have a major positive effect is debatable. Policies designed to improve education, training, and public infrastructure, tax incentives to spur research and development and investment, and other tax-transfer policies related to work and saving incentives may ultimately help productivity. Their significance, however, is in dispute. Policies that seek to stabilize the economy can help to provide an environment favorable for growth in productivity if they succeed, but some economists oppose them on the ground that the government does not have the knowledge and skill to "finetune" the economy. Even given these uncertainties, the Nation could expect to increase productivity with a concerted policy to do so.

# APPENDIX: SUPPORT TABLE FOR FIGURES

## SAVINGS RATES: 1946-1985

| Year | Net Natl Prdct (1.9) | Persnl Saving Rel to NNP | Net Corp Saving Rel to NNP | Net Priv Saving Rel to NNP | St&Lo Surplus Rel to NNP | St&Lo Soc Ins Rel to NNP | St&Lo Other Rel to NNP | Fed Surplus Rel to NNP | Govt Surplus Rel to NNP | Total Net Saving Rel to NNP | Adjsted NIPA Saving Rel to NNP | F of F Pension Saving Rel to NNP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1946 | 198200 | 6.861755 | 1.261352 | 8.123107 | 0.958627 | | | 1.765893 | 2.724520 | 10.84762 | 6.912209 | |
| 1947 | 217600 | 2.389705 | 2.481617 | 4.871323 | 0.459558 | | | 6.158088 | 6.617647 | 11.48897 | 2.435661 | |
| 1948 | 241200 | 4.601990 | 4.477611 | 9.079601 | 0.041459 | | | 3.441127 | 3.482587 | 12.56218 | 4.684908 | |
| 1949 | 238400 | 3.104026 | 4.446308 | 7.550335 | -0.29362 | | | -1.09060 | -1.42617 | 6.124161 | 3.187919 | 0.753775 |
| 1950 | 264600 | 4.761904 | 3.099017 | 7.860922 | -0.45351 | | | 3.476946 | 3.023431 | 10.88435 | 4.875283 | 1.187830 |
| 1951 | 306200 | 5.421293 | 2.873938 | 8.295231 | -0.13063 | | | 2.122795 | 1.992161 | 10.28739 | 5.519268 | 0.932723 |
| 1952 | 322500 | 5.395348 | 2.976744 | 8.372093 | 0 | | | -1.14728 | -1.17829 | 7.193798 | 5.519379 | 1.181395 |
| 1953 | 340700 | 5.400645 | 2.524214 | 7.924860 | 0.029351 | | | -2.08394 | -2.05459 | 5.870267 | 5.518051 | 1.276783 |
| 1954 | 340000 | 4.823529 | 2.882352 | 7.705882 | -0.32352 | | | -1.76470 | -2.08823 | 5.617647 | 4.970588 | 1.383823 |
| 1955 | 371500 | 4.306864 | 3.983849 | 8.290713 | -0.34993 | | | 1.184387 | 0.834454 | 9.125168 | 4.441453 | 1.329205 |
| 1956 | 390100 | 5.460138 | 3.255575 | 8.715713 | -0.23071 | | | 1.563701 | 1.332991 | 10.04870 | 5.613945 | 1.326839 |
| 1957 | 409900 | 5.537936 | 3.000731 | 8.538667 | -0.34154 | | | 0.561112 | 0.219565 | 8.758233 | 5.708709 | 1.540619 |
| 1958 | 414000 | 5.869565 | 2.439613 | 8.309178 | -0.57971 | 0.422705 | -1.00241 | -2.48792 | -3.04347 | 5.265700 | 6.062801 | 1.538888 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1959 | 451200 | 4.831560 | 3.457446 | 8.289007 | -0.08865 | 0.448803 | -0.53745 | -0.24379 | -0.35460 | 7.934397 | 5.053191 | 1.676418 |
| 1960 | 468900 | 4.435913 | 2.964384 | 7.400298 | 0.021326 | 0.485178 | -0.46385 | 0.639795 | 0.661121 | 8.061420 | 4.670505 | 1.576882 |
| 1961 | 486100 | 5.122402 | 2.921209 | 8.043612 | -0.08228 | 0.504011 | -0.58629 | -0.80230 | -0.88459 | 7.159020 | 5.369265 | 1.588150 |
| 1962 | 525200 | 4.931454 | 3.789032 | 8.720487 | 0.095201 | 0.485529 | -0.39032 | -0.79969 | -0.72353 | 7.996953 | 5.198019 | 1.506473 |
| 1963 | 555500 | 4.428442 | 3.942394 | 8.370837 | 0.090009 | 0.513051 | -0.42304 | 0.054005 | 0.126012 | 8.496849 | 4.698469 | 1.527992 |
| 1964 | 595900 | 5.286121 | 4.245678 | 9.531800 | 0.167813 | 0.537002 | -0.36918 | -0.55378 | -0.38597 | 9.145829 | 5.554623 | 1.754992 |
| 1965 | 647700 | 5.295661 | 4.832484 | 10.12814 | 0 | 0.528794 | -0.52879 | 0.077196 | 0.077196 | 10.20534 | 5.558128 | 1.664350 |
| 1966 | 709900 | 5.071136 | 4.718974 | 9.790111 | 0.070432 | 0.559938 | -0.48950 | -0.25355 | -0.18312 | 9.606986 | 5.366953 | 1.862938 |
| 1967 | 749000 | 6.021361 | 4.165554 | 10.18691 | -0.14686 | 0.640854 | -0.78771 | -1.76234 | -1.89586 | 8.291054 | 6.368491 | 1.637116 |
| 1968 | 318700 | 5.191156 | 3.591058 | 8.782215 | 0.012214 | 0.641260 | -0.62904 | -0.73286 | -0.73286 | 8.049346 | 5.545376 | 1.685354 |
| 1969 | 382500 | 4.781869 | 2.855524 | 7.637393 | 0.169971 | 0.660056 | -0.49008 | 0.951841 | 1.121813 | 8.759206 | 5.144475 | 1.692914 |
| 1970 | 926600 | 6.227066 | 1.931793 | 8.158860 | 0.194258 | 0.750053 | -0.55579 | -1.33822 | -1.14396 | 7.014893 | 6.658752 | 1.718452 |
| 1971 | 1005100 | 6.596358 | 2.626604 | 9.222962 | 0.258680 | 0.758630 | -0.49995 | -2.18883 | -1.94010 | 7.282857 | 7.014227 | 1.795271 |
| 1972 | 1104800 | 5.557566 | 3.113685 | 8.671252 | 1.221940 | 0.785209 | 0.436730 | -1.52063 | -0.30774 | 8.363504 | 6.010137 | 2.185767 |
| 1973 | 1241200 | 7.170480 | 2.980986 | 10.15146 | 1.087657 | 0.775459 | 0.312197 | -0.45117 | 0.636480 | 10.78794 | 7.613599 | 2.315296 |
| 1974 | 1335400 | 7.241276 | 1.512655 | 8.753931 | 0.539164 | 0.823723 | -0.28455 | -0.86865 | -0.32200 | 8.431930 | 7.735509 | 2.783476 |
| 1975 | 1436600 | 7.281080 | 2.582486 | 9.863566 | 0.313239 | 0.913615 | -0.60037 | -4.83085 | -4.51761 | 5.345955 | 7.858833 | 2.969486 |
| 1976 | 1603600 | 5.974058 | 2.893489 | 8.867548 | 0.947867 | 0.975929 | -0.02806 | -3.33624 | -2.39461 | 6.472935 | 6.616363 | 2.882247 |
| 1977 | 1789000 | 5.069871 | 3.482392 | 8.552263 | 1.503633 | 1.004751 | 0.498882 | -2.57126 | -1.06763 | 7.484628 | 5.729457 | 3.081543 |
| 1978 | 2019800 | 5.455985 | 3.416179 | 8.872165 | 1.430834 | 1.003812 | 0.427022 | -1.45063 | -0.01980 | 8.852361 | 6.109515 | 3.355278 |
| 1979 | 2242400 | 5.266678 | 2.764694 | 8.031573 | 1.230824 | 1.060247 | 0.170576 | -0.71798 | 0.512843 | 8.544416 | 5.789118 | 3.376917 |
| 1980 | 2428100 | 5.638153 | 1.552654 | 7.190807 | 1.103743 | 1.114039 | -0.01029 | -2.52460 | -1.42086 | 5.769943 | 6.449487 | 3.980317 |
| 1981 | 2704800 | 5.893226 | 1.597160 | 7.490387 | 1.260721 | 1.110063 | 0.150658 | -2.35876 | -1.09804 | 6.392339 | 6.713989 | 3.632253 |
| 1982 | 2782800 | 5.530401 | 0.718700 | 6.249101 | 1.261319 | 1.325104 | -0.06378 | -5.24292 | -3.98160 | 2.267500 | 6.565329 | 4.446025 |
| 1983 | 3009100 | 4.340168 | 2.160114 | 6.500282 | 1.578545 | 1.431491 | 0.147053 | -5.84892 | -4.27370 | 2.226579 | 5.496660 | 3.905220 |
| 1984 | 3349900 | 5.035971 | 2.716499 | 7.752470 | 2.044837 | 1.459745 | 0.585092 | -5.07477 | -3.02994 | 4.722529 | 6.233021 | 3.148183 |
| 1985 | 3560900 | 4.024263 | 3.013283 | 7.037546 | 1.732708 | 1.479962 | 0.252745 | -5.56039 | -3.82768 | 3.209862 | 5.237439 | 3.819820 |

# CHAPTER 5. INCOME, WEALTH, POVERTY AND THE LIFE CYCLE*

## I. INTRODUCTION

This chapter examines the current distribution of income (before and after taxes), wealth, and poverty, in order to show the current economic position of persons according to their age. The chapter intends to serve as a point of reference and departure for the other background papers. Unless explicitly noted, data displayed in this chapter are cross-sectional, based on individual data at a point in time.[1] The patterns depicted by the data should not be confused with trends that follow individuals over time. The data presented here purport neither to show how well present generations are faring relative to past generations, nor to project what their future income picture will look like. Rather, the intent is to show how the aged are presently faring relative to other groups. Some of the findings from this chapter are:

—Income varies considerably over the life cycle. Cross-sectional data shows that per capita income is highest among those who are age 50 to 60. Per capita income shares are lowest among very young children and among very old adults.

—Although the aged tend to have lower incomes than their younger counterparts, they face lower levels of taxation on each dollar earned than that of their younger counterparts when compared at equal incomes.

—Assets provide a potentially important source of income to many of the aged. Equity in a home is the most important asset that most aged hold.

—Household net worth (wealth less unsecured debt) is more unequally distributed than family income. Of those households with heads age 65 to 69, one-quarter had a net worth of $25,000 or less in 1984, whereas 10 percent had a net worth of $225,000 or more. When only assets other than a home are considered, 25 percent of households with heads age 65 to 69 had a total net worth less than $3,000, and 10 percent had $148,000 or more.

—Net worth increases with income. However, at equal levels of income, households with older heads have greater net worth than households with younger heads.

—The living arrangements of the aged can dramatically affect their level of economic (as well as social) well-being. For example, the income position of the aged differs significantly when family size and economies of scale are taken into account. Adjustments for family size tend to improve the economic position of the aged relative to the non-aged, since families with an aged member typically have fewer members than families without aged members. However, smaller families face many of the same fixed costs of large families; adjustments for economies of scale, which take into account such fixed costs, tend to reduce the income position of the aged relative to other groups.

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*This chapter was prepared by Thomas Gabe, Congressional Research Service.

[1] Unless otherwise noted, data presented in this chapter are original tabulations from the Survey of Income and Program Participation (SIPP) Wave IV data file. Data are cross-sectional, covering varying 4-month retrospective accounting periods for persons. Interviews were conducted from Sept. to Dec. 1984, and the data cover the period between May and Nov. 1984.

—While non-aged adults and children depend largely upon earnings for their income support, the aged depend upon a variety of income sources.

—Income available to the aged is directly tied to their earnings history, savings and investments. Social security, employer provided pensions, and asset income, for the more well-to-do, (upper income quartile) provide the bulk of income support among the aged. While public assistance (Supplemental Security Income) helps to provide a minimum income floor for the aged, social security provides the bulk of income going to the aged whose incomes put them in the bottom quarter of the income distribution.

—Income among the aged is more equally distributed than among other age groups, largely as a result of government transfers, which tend to distribute proportionately more dollars to lower income groups.

—While the aged account for only 11.5 percent of the population, they receive over half of all cash and non-cash transfers.

—Income transfer programs to the aged have greatly improved their level of economic well-being and reduced poverty. Poverty among the aged was once the highest of any age group, but, as a result of government transfer programs, it is now about equal to that of the population as a whole.

—While the incidence of poverty among children and non-aged adults was increasing during the period from 1980 to 1985, largely due to recession, poverty was decreasing among the aged, largely as a result of government transfer programs (e.g., social security).

—In spite of the lower poverty rates among the aged than for the population as a whole, certain groups among the aged are more likely to be poor: blacks and Hispanics, the very old, and women, especially those who are divorced or widowed.

## II. INCOME DURING THE PERIODS OF WORK AND RETIREMENT

Income and savings patterns vary widely across the life cycle. Typically, incomes are low when workers are young, and increase with age and experience. For many, during early years of work, saving may help provide a cushion for starting a family, or to provide the down payment on the purchase of a first home; during the middle years, saving goals may focus on helping put a child through school, and in later years to provide a nest egg for retirement. For others especially those whose incomes are low, income may go only toward current consumption rather than toward savings.

After workers retire, income from a variety of sources can help replace income once provided by earnings. Social security benefits, for example are directly tied to career earnings received from occupations covered by social security. Assets accumulated at time of retirement may also be tied to career earnings, since workers who earn more can generally save a greater share of their earnings than workers whose incomes are stretched to meet basic needs. Acquired assets will reflect not only the work career of the individual, but the state of the economy over the individual's career as well. The mechanisms by which individuals save and invest are important, since differing returns on savings and investments may dramatically affect the size of assets accumulated during working years. The state of the ecomomy during retirement, and how long the individual lives also affects the income available during retirement. Pension equity may constitute an important asset as well. Whether an individual is covered by an employer sponsored pension plan at the time of retirement has an important bearing on one's retirement income. The establishment of pension coverage, as discussed in chapter 9, is related to a host of factors reflecting the individual's work career, including the type of employer, the stability of employment over the work career, and the individual's earnings history.

Whether retirement income is considered adequate, or not, depends both upon societal standards and individual comparison. Society may consider a minimum standard income to meet basic needs, such as the official poverty thresholds, as a benchmark to judge issues of adquacy (level) of income as well as equity (distribution) of income. Individuals may consider the adequacy of income in terms of both their absolute level of income and their relative level of income. They may not only compare their retirement income to what they formerly received as workers, or to what they expected as retirees, but also to how well they are doing relative to other retirees.

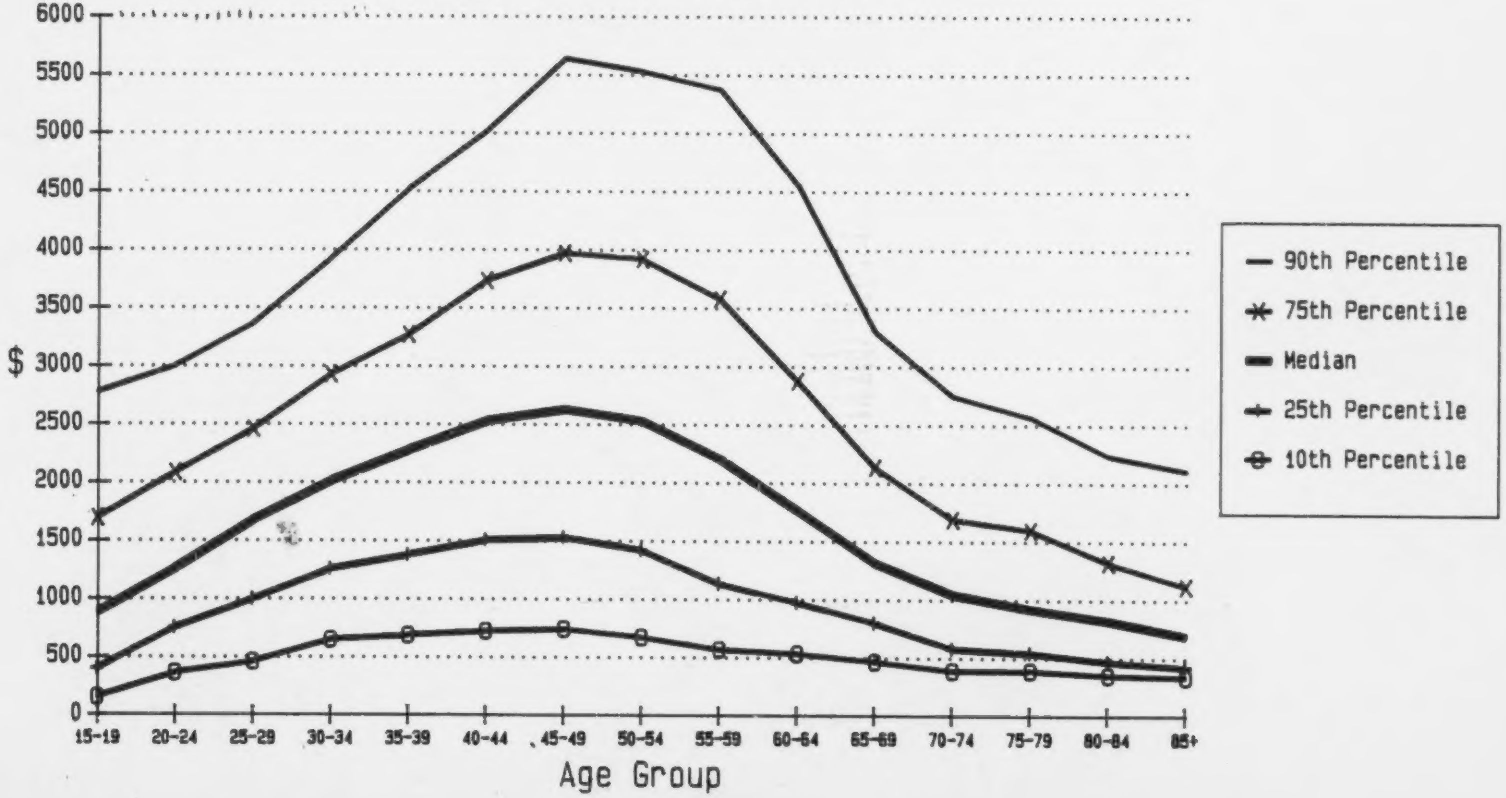
## A. FAMILY INCOME AND AGE

Both the level and composition of income varies considerably over one's lifetime. During the period of work, most families depend upon earnings for income support. Income derived during retirement is contingent, to some extent, upon assets accumulated and claims established on pensions and/or social security during the period of work.

Family income tends to be highest in working years. Median family income reaches its peak when the head is between the ages of 40 and 54. Figure 5.1 shows income percentiles of the average monthly income families and unrelated individuals received during 1984. The figure shows, for example, that half of all families (and unrelated individuals) with heads between the ages of 40 and 54 receive more than $2,500 per month (the median amount) during the latter part of 1984. The median income of families with heads age 40 to 54 was over twice as high as the median of families in which the householder was age 65 or older, and twice the median of families in which the householder was age 20 to 24.

FIGURE 5.1

Average Monthly Family Income Percentiles
By Age of Householder: 1984



The data presented here are cross-sectional, so the patterns depicited reflect both current circumstances and the historical experience of each age group. To some degree, the data reflect the effects of processes associated with aging, but they also reflect the unique historical experiences of each age group. As a result, caution should be used in interpreting the data. As those currently aged 40 to 45 grow older, one would not expect their income to exactly parallel those who are currently older than age 45.

Take those, for example, who are presently age 80 to 84. Most of this group's early work careers were spent during the Great Depression, being between the ages of 24 and 29 at its onset. They were in their late thirties and early forties when the United States entered World War II. Not until they were in their late forties did they finally experience a period of sustained prosperity. Of this group, most were likely to have retired some fifteen to twenty-five years ago, between 1960 and 1970; before the prolonged period of economic "stagflation" experienced during the 1970's. Their current retirement income is in large part contingent upon their career earnings and remaining accumulated assets. They have also experienced social security cost-of-living adjustments (COLA's) and ad hoc benefit increases, which help account for this group's current income level.

In comparison, those who are presently age 50 to 54, many of whom may be children of the 80- to 85-year-olds, were born during the worst of the Great Depression. This group would have been too young to enter military service during World War II, but of prime age to serve during the Korean War. After Korea, they faced a period of nearly two decades of sustained economic growth as they began their work careers. While most were securely established in their work careers during the stagnant economy of the 1970's, many found that their wages and salaries did not keep pace with inflation of the period. With retirement not far off, this age group, like much of the rest of American society, is presently reaping the benefits of current economic growth. While the age 50 to 54 group will most likely experience a decline in income when they retire, the reduction probably will be smaller than that implied by comparing them with older groups on the basis of cross-sectional data, since today's workers aged 50 to 54 have different histories from their predecessors.

### B. THE DIFFERING EFFECT OF TAXES ON FAMILY INCOME BY AGE[2]

Taxes can have a significant impact on disposable income. Most persons find that while their incomes diminish once they retire, their tax situation improves when compared to the period in which they worked. This is true for a number of reasons. First, retirees normally find themselves in lower tax brackets than when they worked due to the lower incomes they generally receive in retirement compared to that which they earned during the period of work. Due to the progressivity of the income tax system, those with lower incomes generally pay a lower portion of their total income in taxes. However, as a result of the Tax Reform Act of 1986, which establishes fewer tax brackets, not as many retirees in the future will find themselves in lower tax brackets when compared to the period in which they worked. Second, the income tax system has favored the aged in special ways. For example, persons age 65 or older have been able to claim an additional exemption on their Federal (and State) income tax, and certain low income elderly may also claim a 15 percent tax credit.[3] The aged also receive favorable tax treatment in other ways. For example, persons age 55 and older can avoid paying tax on capital gains up to $125,000 on the one-time sale of a home. Before 1984, social security benefits, a major source of income to the aged, were not subject to Federal income tax; beginning in 1984, at most one-half the social security benefit may be subject to Federal income tax. Another difference between workers and retirees is that retirees are not subject to FICA tax (taxes which amount to 7.15 percent of wage and salary workers' first $43,800 in earnings in 1987). It should be remembered that the tax treatment of the future aged will likely differ from that of today's aged, due to the Tax Reform Act of 1986 as well as changes that may occur in tax law.

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[2] Tax treatment of income is discussed further in chapter 7 of this report.

Figure 5.2 compares mean income of households and mean income per household member, before and after taxes, by age of householder.[4] Mean before and after-tax household income is greatest among those households headed by someone between the ages of 45 and 49; for this group the mean income per household in 1984 was $36,393 before taxes and $27,765 after taxes, an effective average tax rate of nearly 24 percent. The income position of elderly headed households appears much improved, compared to non-elderly headed households, when per capita household income is used as the measure instead of total mean household income, which makes no adjustment for household size. The shift in the peak of the distributions from 45 to 49 age group under the household measure to the 55 to 64 age groups under the per capita measure is due largely to the larger size households among the 45 to 49 age group.[5]

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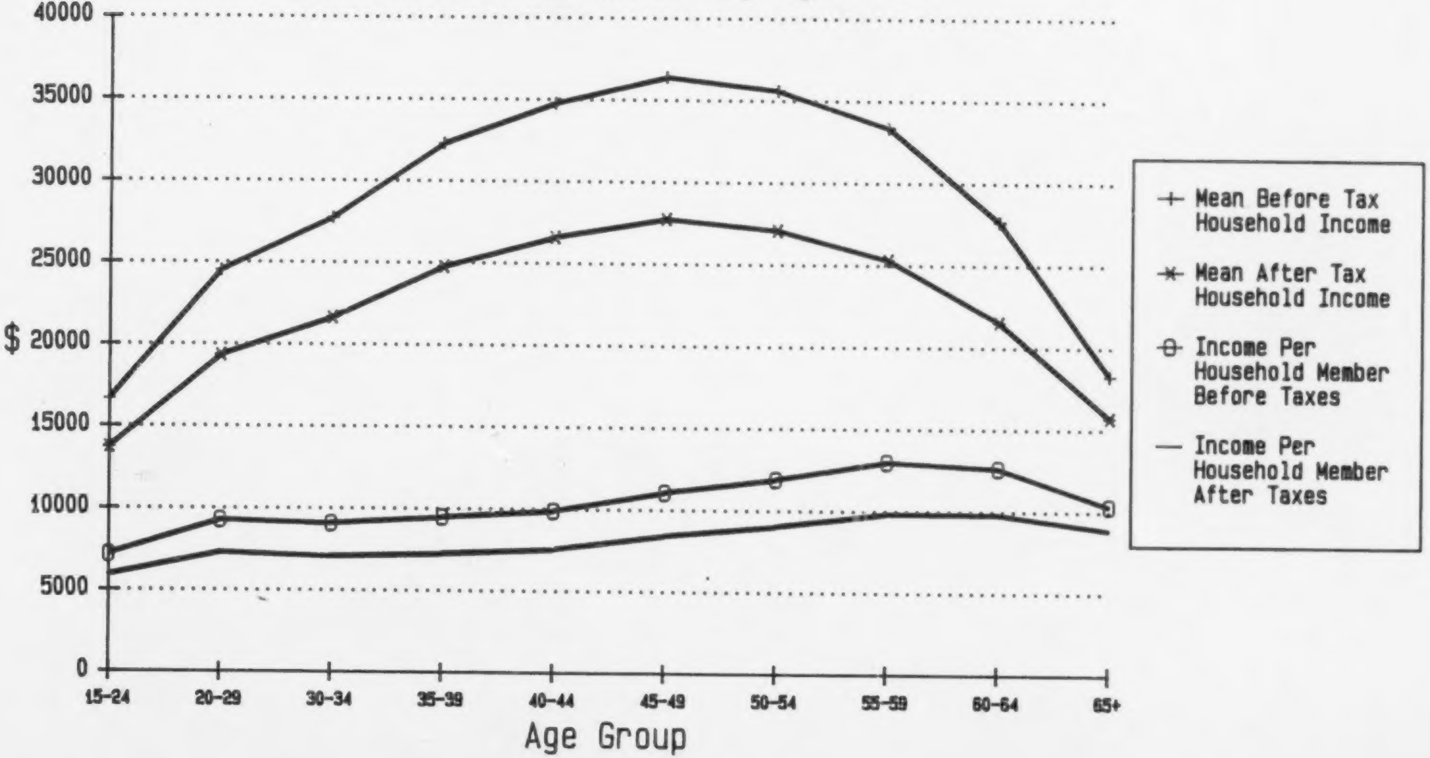
[3] The Tax Reform Act of 1986 repealed the special exemption for the elderly. In its place a $600 deduction for elderly married individuals and a $750 deduction for elderly unmarried individuals is provided. The elderly tax credit has not changed.

[4] Taxes in this section include Federal and State income taxes, FICA payroll taxes, and property taxes on one's own home. Data presented in this section are derived from: U.S. Bureau of the Census. Currently Population Reports. Series P-23, No. 147. After-Tax Money Income Estimates of Households: 1984. U.S. Government Printing Office. Washington, D.C. 1986.

[5] It should be noted that while per capita income measures more accurately reflect the resources available to each family member than total income measures, it does not account for things such as different consumption needs of individuals. For example, the elderly have greater medical expenses while housing costs are higher for younger families.

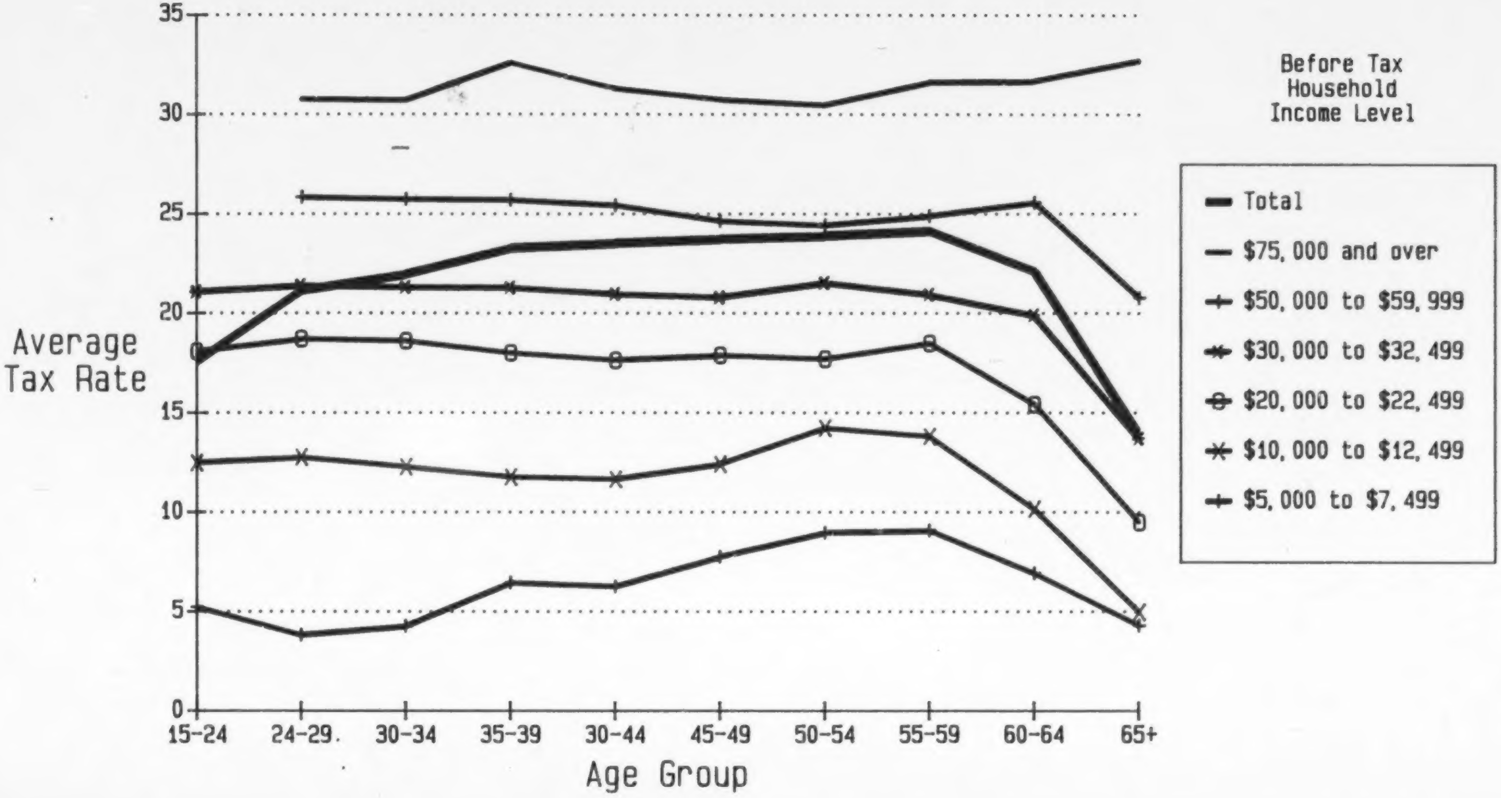
Figure 5.2
Mean Income of Households and
Income Per Household Member
Before and After Taxes, by Age: 1984



Households headed by persons age 65 and over face substantially lower tax rates, at nearly every level of income, than those households with younger heads. Figure 5.3 shows household average tax rates by householders' age and before tax household income in 1984. Households with lower incomes that are headed by persons age 60 to 64 also show lower average tax rates than households headed by persons in their fifties. A primary reason why average tax rates are lower for the 60 to 64 year group is that a substantial proportion of these households are no longer working and, thus, are no longer subject to FICA taxes.

FIGURE 5.3

Average Tax Rate by Householder's Age
and Before-Tax Income Level: 1984



## III. THE PROFILE OF HOUSEHOLD NET WORTH AND HOME EQUITY BY AGE

The life cycle theory of saving assumes that people try to attain and at least maintain particular consumption goals over their lifetimes. The fact that most people anticipate some period of retirement, when they will no longer have earnings from work, theoretically is a basic factor affecting savings behavior. It is common to regard the period of work as the time when savings accumulate for later retirement, and retirement as the time when assets are liquidated to provide income for current consumption.

### A. TOTAL HOUSEHOLD NET WORTH [6]

Assets, accumulated from savings, investments, and bequests provide potentially important sources of income for many during retirement. Figure 5.4 shows percentile distributions of household total net worth [7] (wealth less unsecured debt) by age of the householder. It is important to note that pension equity, a potentially important asset, is not available from the SIPP and, therefore, is not included in the figure. As with total income, net worth is higher among households in each successive age group, peaking among household heads between the ages of 55 and 59, and then diminishing. The figure shows that half of all households headed by someone between the ages of 55 and 59 have a total net worth of $72,000 or more; this is over five times the median net worth of households with heads between the ages of 30 and 34.

Half of all households with a household head age 85 or older have a total net worth of nearly $48,000 or more, which is about two-thirds that of households with heads age 55 to 59. Again, the cross-sectional data should not be confused with longitudinal data, representing persons over their lifetimes.

Household net worth is more unequally distributed than family income. A substantial share of households have near zero or negative net worth, while at the same time a sizable share have substantial net worth. The top line of figure 5.4 shows the net worth of households at the top 10th percentile of household net worth. For example, among households with heads age 65 to 69, 10 percent have a total net worth of $225,000 or more; the bottom 25 percent have a net worth slightly over $25,000 and the bottom 10 percent have just over $1,000. Among those age 85 and over, the bottom 10 percent of households have a total net worth of just $400, and the bottom 25 percent just slightly less than $15,000; the top 10 percent of households with a head age 85 or older have a net worth in excess of $160,000. To some extent, the difference in net worth between the "young-old", age 65 to 69, and the "old-old", those age 85 and older, may be due to the liquidation of assets to meet current consumption needs. The difference may also reflect the difference in net worth that each cohort had accumulated when they were at comparable ages.

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[6] Asset information from the SIPP should be approached with some caution. For example, while nonresponse rates for asset ownership are generally low (ranging from 0.9 percent for rental property and royalties to 2.2 percent for certificates of deposit), nonresponse rates for asset amounts tend to be much higher (ranging from 13.3 percent for the amount in checking accounts to 41.5 percent for the market value of stocks and mutual fund shares). The Census Bureau attempts to correct for underreporting by imputing values for nonresponse. A comparison of aggregate SIPP asset amounts (after imputation) with independent estimates derived from Federal Reserve Board (FRB) data indicates that SIPP accounts for about 92 percent of the FRB derived estimate. However, SIPP tends to overestimate the value of certain tangible assets (e.g., equity in own home and motor vehicles), but underestimate the value of noncorporate businesses and financial assets (e.g., interest earning assets, corporate equities, etc.). Also, due to the difficulties of gathering reliable data, certain assets (pension plan equity, cash surrender value of life insurance policies, and the value of household furnishings such as furniture, antiques, art and jewelry) are excluded all together from the SIPP. Lastly, the SIPP sampling frame does not deliberately attempt to oversample households at the top of the income distribution. Because wealth tends to be concentrated, estimates could be affected by the possible exclusion of top wealth holders from the survey.

[7] Net worth is defined as total household wealth less unsecured debt (credit card debt, installment debt, etc.). Household wealth includes: interest earning assets at financial institutions, such as savings accounts and certificates of deposit; other interest earning assets, such as money market funds and government securities; checking accounts, stocks and mutual fund shares, home equity and other real estate equity, vehicles, business or professional interests, IRA or KEOGH accounts, and other financial investments. Equities in pensions, cash surrender value of life insurance policies, and the viaue of jewelry and home furnishings are not included.

Households with higher incomes also have greater net worth. However, even though total household net worth tends to increase with income, when compared at equal income levels, net worth is greater for households with heads who are older than for heads households with heads who are younger (see figure 5.5). For example, taking householders having annual household income of $15,000 to $19,999, one-half of those age 65 and over have a total net worth of about $82,000 or more, whereas half of those between the ages of 45 and 64 have about $42,000 or more, and of those between the ages of 25 and 44, half have a total net worth of about $7,500 or less.

FIGURE 5.4
Household Total Net Worth Percentiles
By Age of Householder: 1984

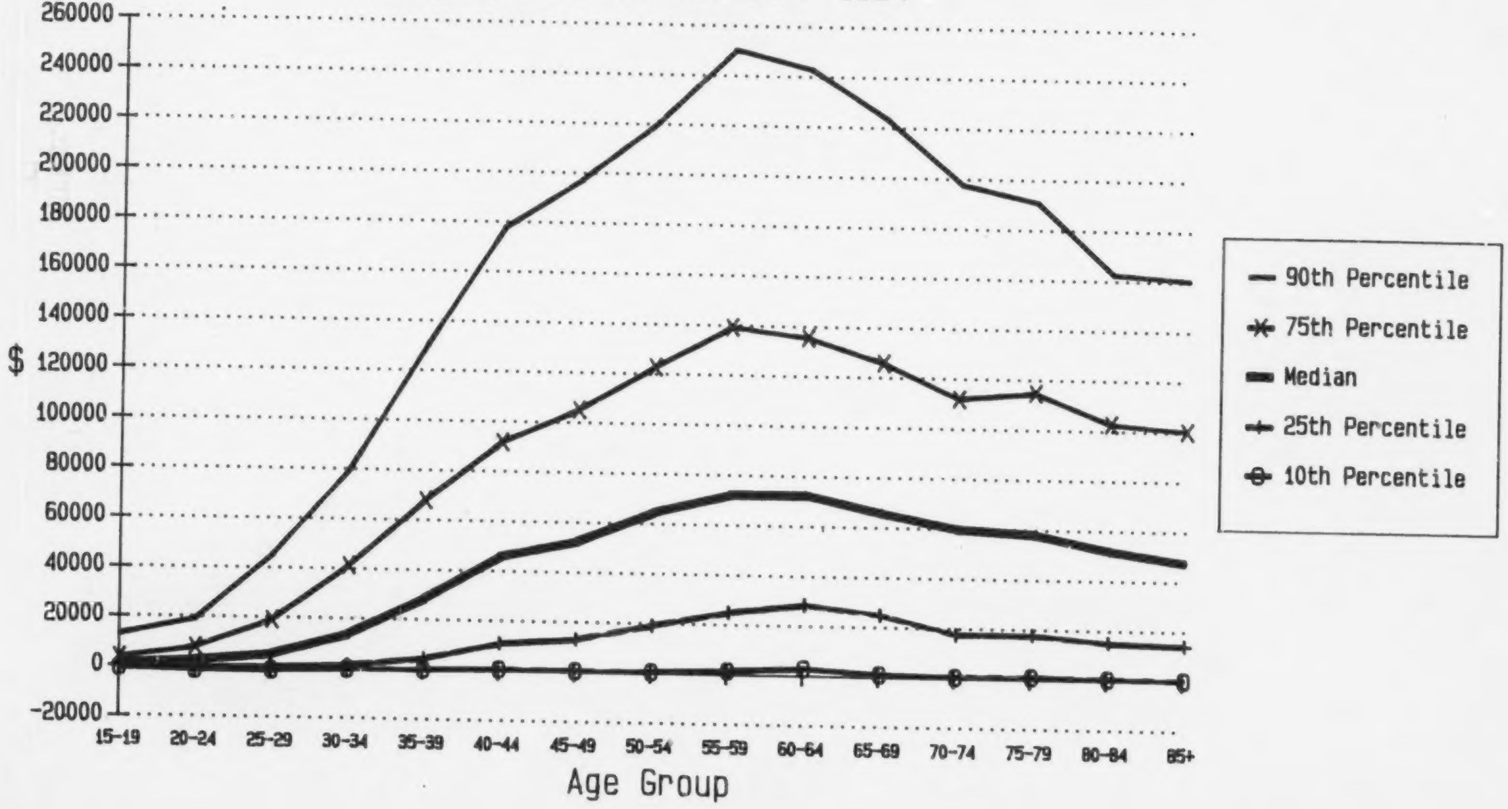
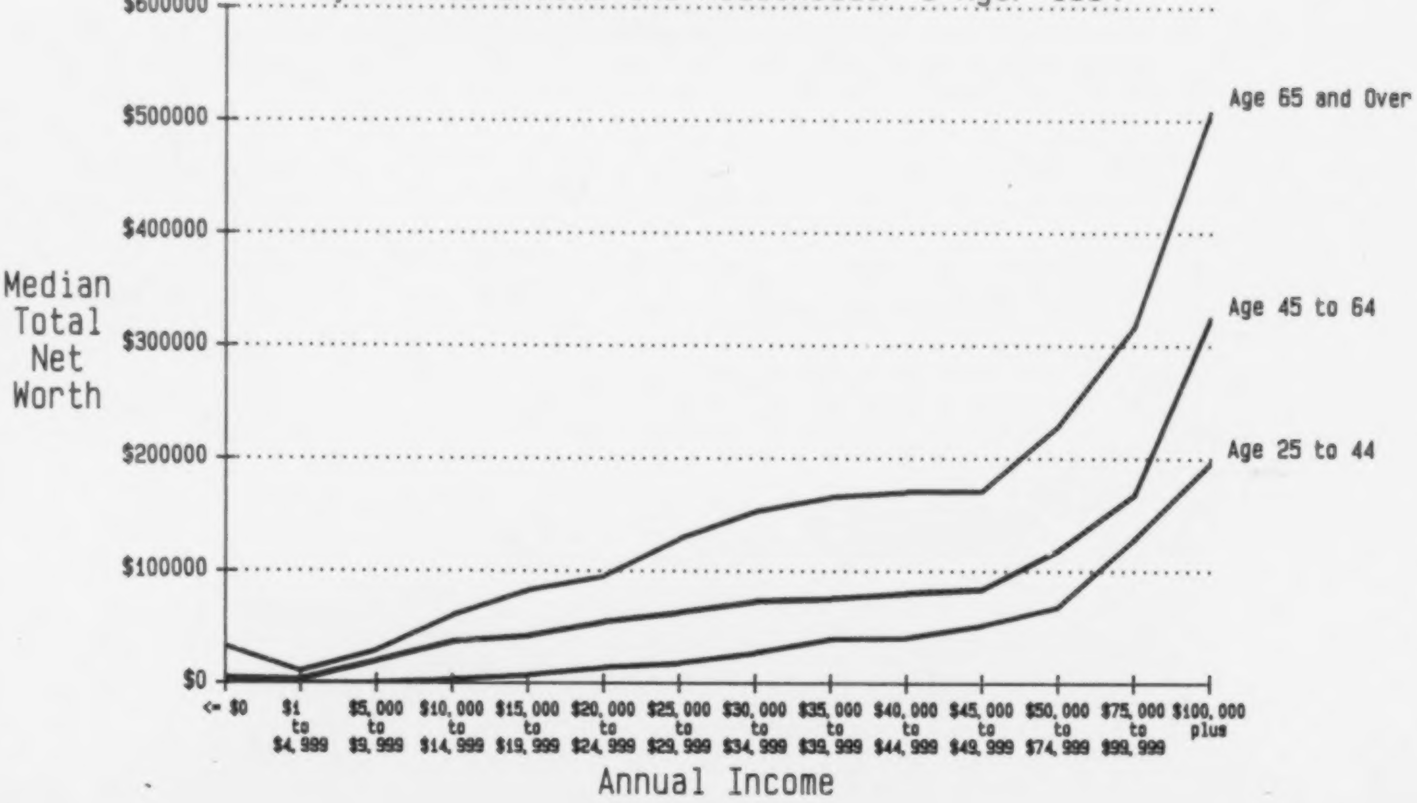


Figure 5.5
Median Total Net Worth
by Annual Income and Householder's Age: 1984



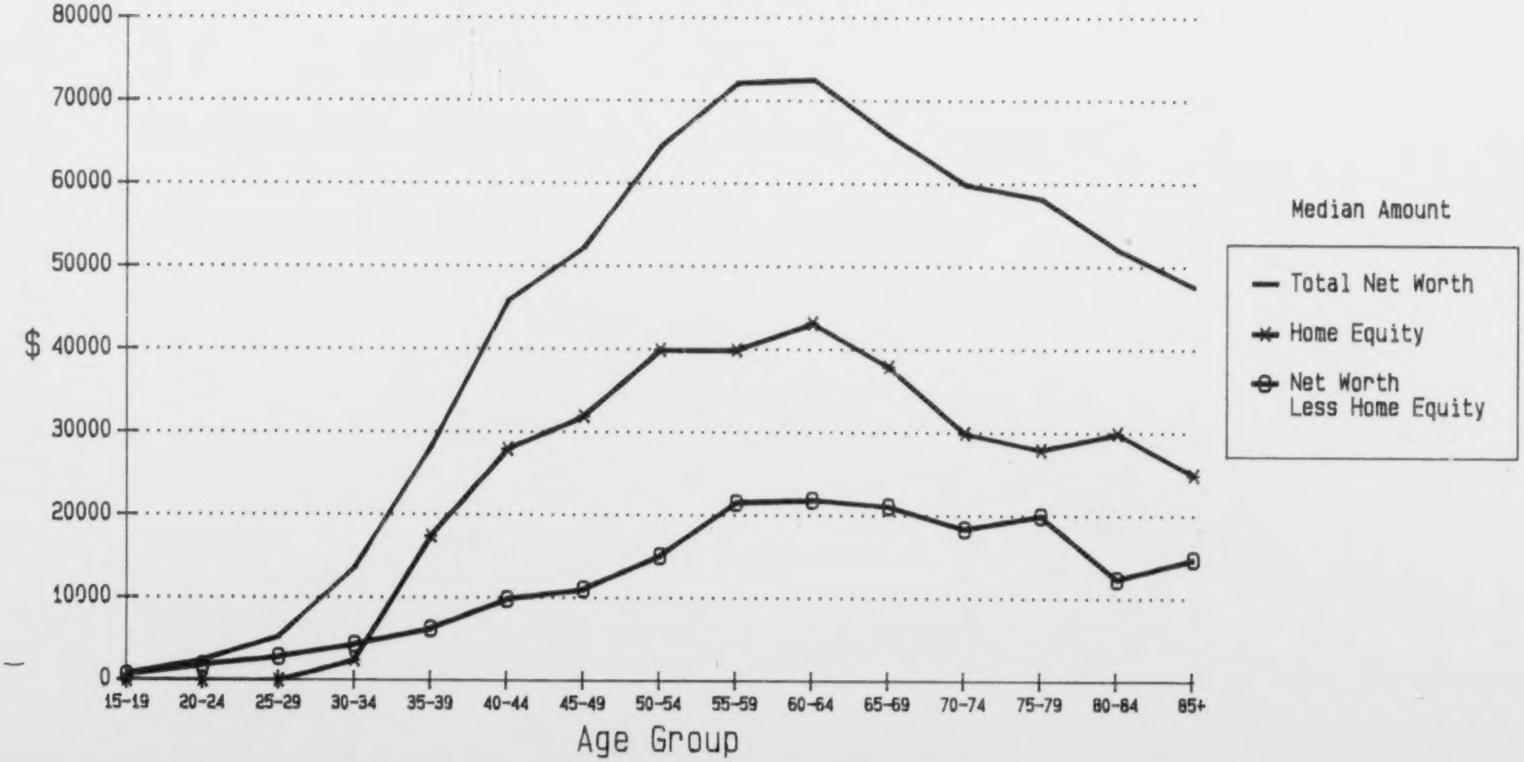
Clearly, while household net worth is related to current income, it is also related to the householder's age. Households with higher incomes tend to accumulate more assets than households with lower incomes. Households with older heads have had a longer time in which to accumulate assets. Since incomes tend to increase with age, up until the period of retirement, and assets tend to accumulate with age, assets represent a potentially important source of income to persons during retirement.

### B. HOME EQUITY

The purchase of a home is the largest investment that most people make, so it is not surprising that home equity is the largest component of total household net worth. Figure 5.6 shows that home equity is the most important component of total net worth for householders age 35 and over, comparing median total household net worth, median home equity, and median household net worth other than home equity.

FIGURE 5.6

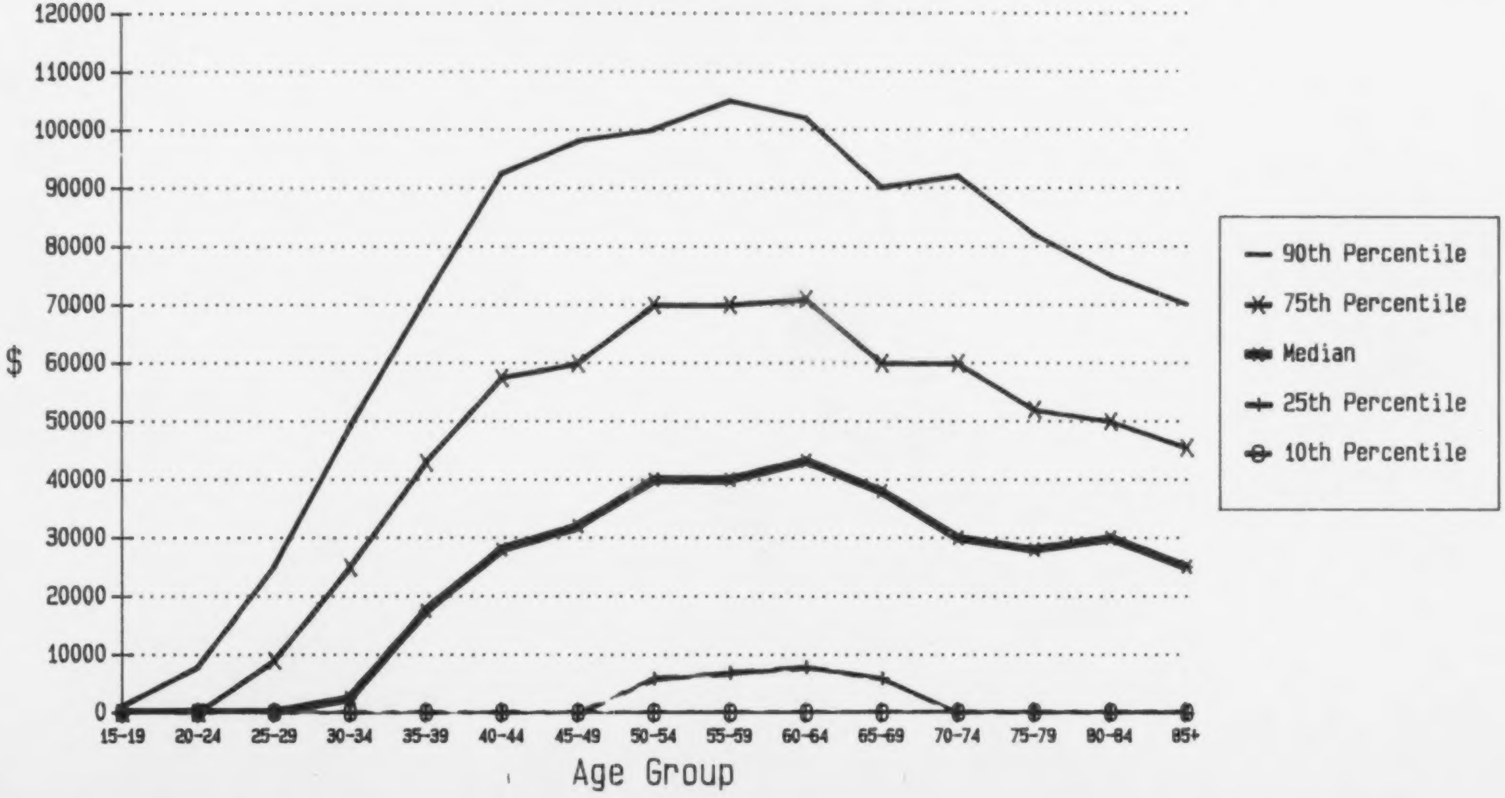
Median Household Net Worth, Home Equity
and Net Worth Less Home Equity
By Age of Householder: 1984



For many persons approaching retirement, home equity may represent a substantial asset which potentially can be converted to income; for others, equity in a home may be minimal or non-existent. Chapter 7 discusses ways, other than the out-and-out sale of a home, to convert home equity into more liquid assets. While a home represents an investment, it also provides shelter, a basic necessity. Even given substantial equity in a home, older persons will need to purchase other shelter if that equity is liquidated; among older persons, many may hold a strong preference to hold on to this asset and may not perceive it as a source of spendable real wealth.

As with total family income, there is substantial variation in home equity among households of different ages. Home equity generally follows the same sort of age profile we have seen for total income and total assets (see figure 5.7). At least one-quarter of those householders under age 35, and one-quarter of those householders age 70 and over, had no equity in a home in 1984. Median home equity of all households in 1984 was highest among those with heads between the ages of 60 to 64; home equity of these households was two-and-one-half times that of households with heads between the ages of 35 and 39 ($42,250 versus $17,500). Households with heads age 65 to 70 have median equity in a home that is 50 percent higher than that of those age 85 and over ($38,000 compared to $25,000). Ten percent of households with heads age 65 to 69 have homes worth $90,000 or more; the top 10 percent of households with heads age 85 and over have homes worth $70,000 or more.

FIGURE 5.7
Home Equity Percentiles of Households
By Age of Householder: 1984

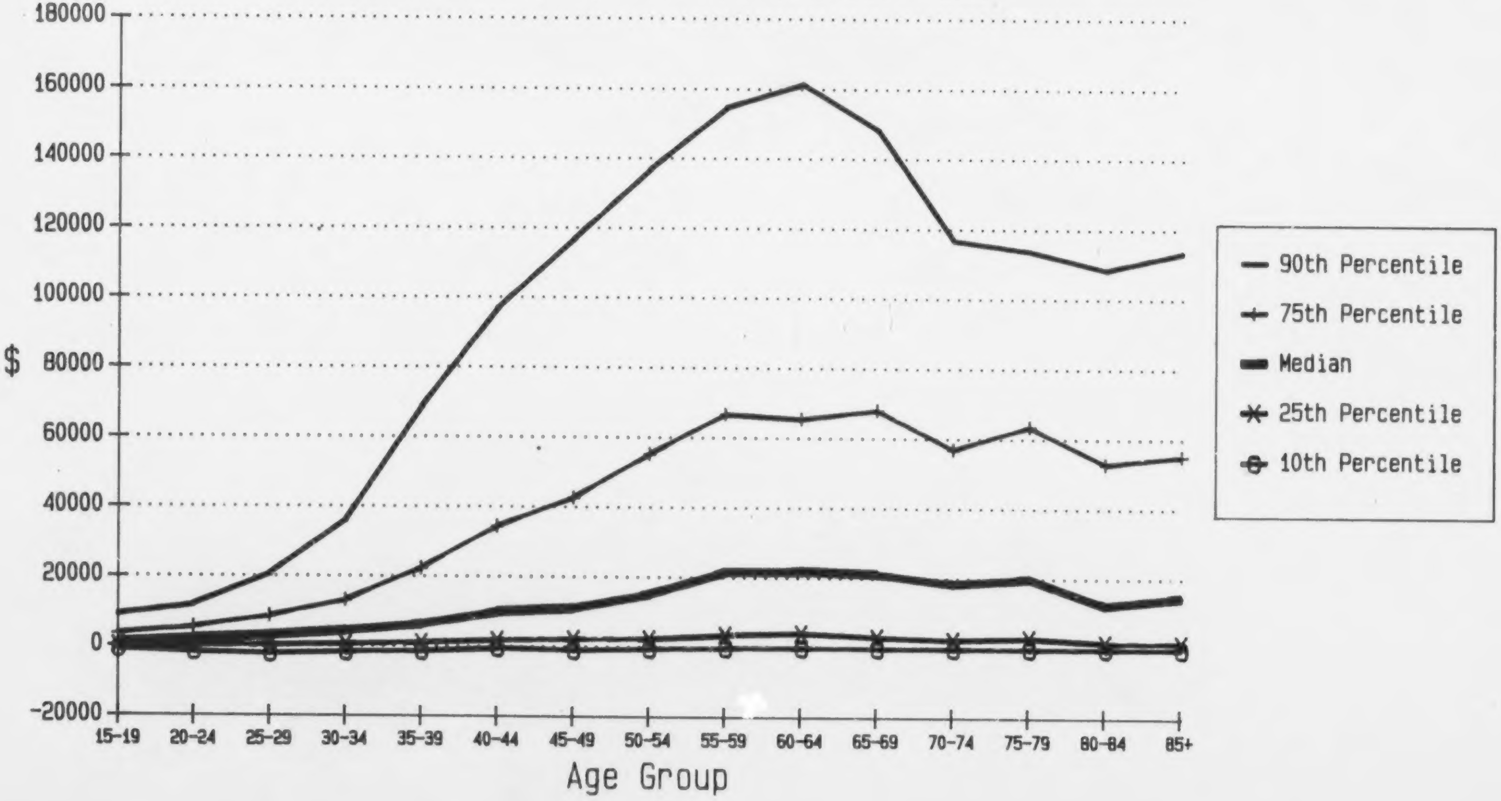


Much of the current value of home equity reflects the boom in house prices during the 1970's. To the extent that future house price inflation is more moderate, younger (more recent) home owners may not experience the relative house values of those who, for example, are presently in their fifties.

### C. NET WORTH FROM SOURCES OTHER THAN HOME EQUITY

Although typically of lesser value than the equity in a home, there is sustantially greater variation in other components of household net worth across the age profile when assets other than equity in a home are considered. Figure 5.8 shows percentiles of household net worth other than home equity by age of householder. Median net worth less home equity is highest among households with heads age 60 to 64, at nearly $22,000, however, 10 percent have more than $161,000. Half of all households with heads age 85 and older have a total net worth less home equity of nearly $15,000 or more, 10 percent have $113,000 or more. A sizable share of the population has negligible net worth when only sources of wealth other than a home are considered. One-quarter of all households have near negligible net worth when home ownership is excluded.

FIGURE 5.8
Household Net Worth Less Home Equity
Percentiles By Age of Householder: 1984



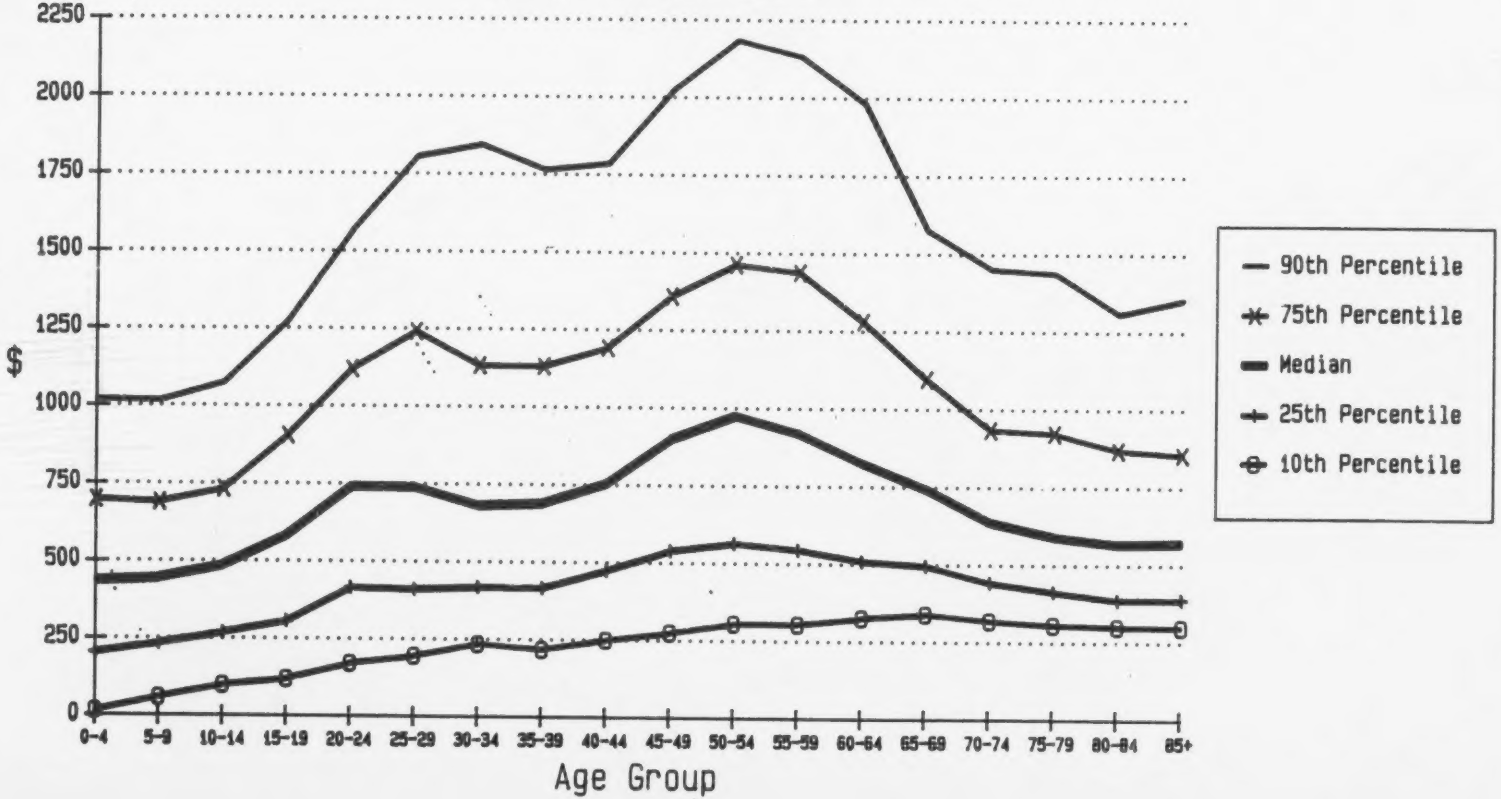
## IV. ADJUSTING INCOME FOR DIFFERENCES IN FAMILY SIZE

The distribution of family income that was shown earlier (in figure 5.1) does not account for differences in "need" among families. In this section, income is adjusted to take into account differences in family size and the (dis)economics of scale associated with family size. Larger families may require more income to maintain the same relative consumption level as smaller ones. Young families tend to be small, and grow in size as children are born. In later years, families contract as children leave to begin separate lives, or when a spouse dies. As a result, families' income and consumption needs vary considerably over the life cycle, simply as a matter of family size.

### A. PER CAPITA INCOME

The age/income profile shows some interesting features when family size is taken into account. Figure 5.9 shows average monthly income per capita by age and income percentile. Per capita income represents the family's total income divided by the number of people in the family, thereby assuming that family income, regardless of source, is shared equally among all family members. Unlike family income, median per capita income shows a trough between the ages of 30 and 39. Current per capita income levels of people in their thirties are lower relative to those of their older and younger counterparts largely because they are in the period of life when children are born and when many mothers withdraw from the labor force, reducing family earnings.

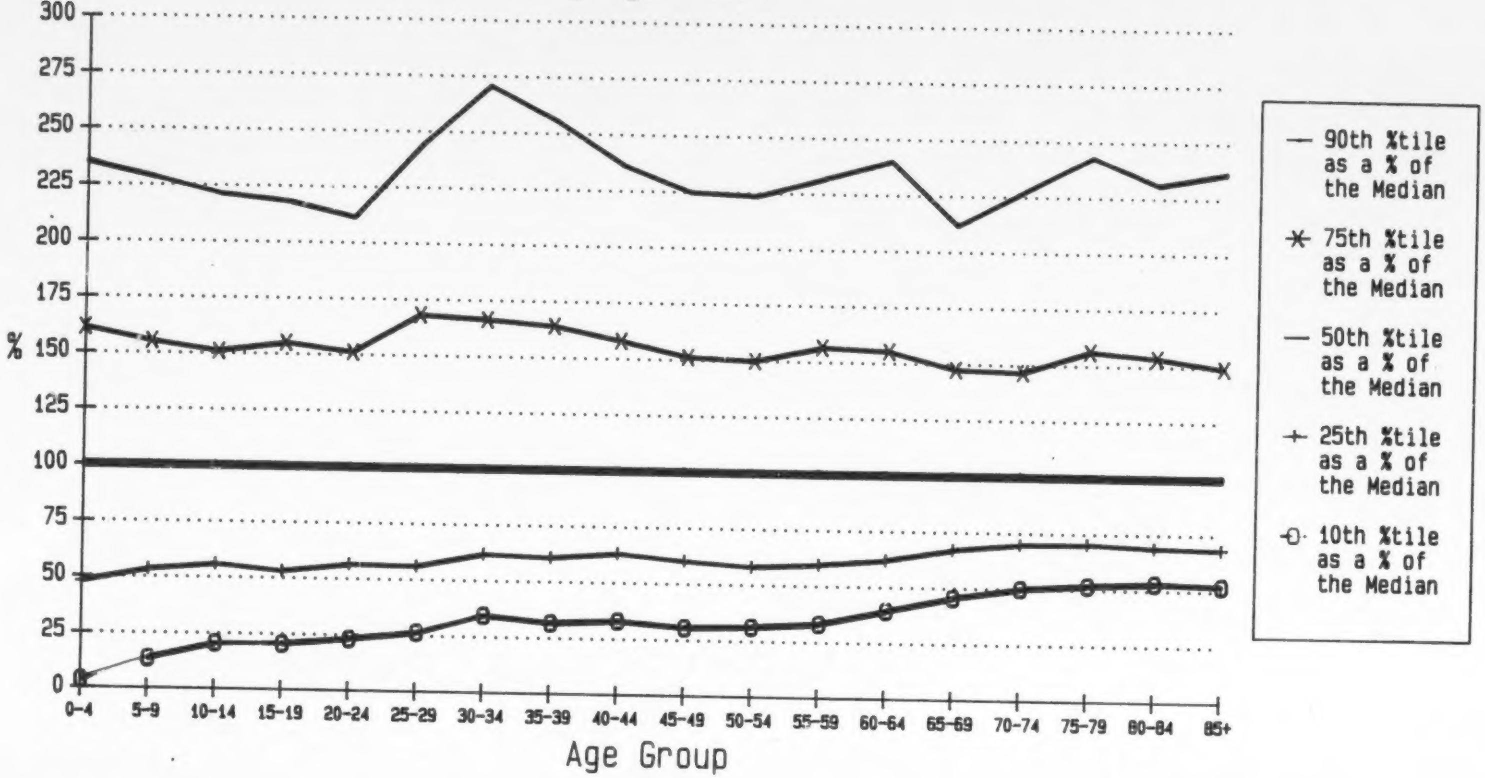
FIGURE 5.9
Average Monthly Per Capita Income Percentiles
By Age Group: 1984



Since aged persons tend to live in smaller families, the aged appear economically better off on a per capita basis than on a total family income basis. As with family income, median per capita income peaks at around age 50 to 54, with half of all such persons receiving $980 or more per month on average. Median average monthly per capita income is substantially lower among older persons, most of them are no longer in the labor force. The median income of persons age 65 to 69 ($740 per month) is about three-quarters that of 50- to 54-year-olds, and about equal that of 40- to 44-year-olds. Among persons age 85 and over, median per capita income is lower yet, at about $570 per month; this level is about 60 percent that of the 50- to 54-year-old group and about the same as that attributable to 15- to 19-year-olds. Again, the relatively lower income levels of the older persons shown in these data reflect not only the life cycle effect of reduced income in retirement, but also the relatively lower lifetime earnings of the elderly in comparison to younger cohorts.

The distribution of per capita income varies considerably, not only between age groups, but within age groups as well. Figure 5.10 shows various income percentiles as a percentage of the median. Two points can be made. First, income is more unequally divided among those who are younger than those who are older. Second, the lesser inequality of income among the aged is due mostly to lessened inequality among the lowest income strata which in turn is due to government income transfer programs.

FIGURE 5.10
Average Monthly Per Capita Income Percentiles
As a Percentage of the Median
by Age: 1984



Among the youngest age group per capita income tends to be lowest and there is also greatest inequality. Median per capita income of 0- to 4-year-olds is about $430 per month. However, the 10th income percentile within this age group is only about $15 per month (i.e., 10 percent had lower income than $15 and 90 percent had higher income than $15). In comparison, the 90th percentile level (the income level at which 10 percent of those in the age group had more and 90 percent had less) is about $1,020 per month—over sixty times as much as the income of the 10th percentile. At age 5 to 9, the per capita income of the 90th percentile ($1,015 per month) is 17 times that of the bottom 10th percentile ($65 per month). Among those age 15 to 19, the difference is further reduced to where the 90th percentile is over ten times that of the bottom 10th percentile.

There are many reasons for the greater inequality in per capita income shares attributable to the very young. Very youngest children tend to live in the most diverse of family circumstances. For example, some may be only children, whereas others may have siblings. The age of a child's parents at time of the child's birth may vary widely. As a result, a young child's parents may be at very different stages in their work careers. In comparison to the younger child, an older child is more likely to have parents who are older, and further along in their work careers. Also, if the older child does not have younger siblings, there is a greater likelihood that both parents will be contributing to family cash income through market work than in the case where there is a younger child. Lastly, the per capita income shares attributable to children will vary widely depending upon whether the child lives with one or both parents.

Among persons who are currently between the ages of 25 and 39, per capita income of the 90th percentile exceeds that of the median by a greater percentage than for any other age group. The peak difference is among the 30- to 34-year-old group. The greater inequality at the top of the income distribution within this age is probably due to a variety of circumstances, including the absence of children among a sizable portion of women in this group and the effect of two earner families. Looking at the lower part of the income distribution, the difference between the lowest 10th percentile and the median is narrowed, so the difference between the top 10th percentile and the bottom 10th percentile is not as great as for younger age groups.

As per capita income tends to be highest among persons in their fifties, the variation in income within age group remains relatively stable across persons in their forties and fifties. The top 10th percentile consistently has about seven times the income of the lowest 10th percentile.

Although persons age 65 and older tend to have lower per capita incomes than other groups, their incomes tend to be more equal. The relative differences between those with relatively high incomes and those with low incomes are less than at any other age. The difference in per capita income between the top 10th percentile and the bottom 10th percentile drops considerably among persons of retirement age and is remarkably stable. Among persons age 65 and over, the difference between the highest and lowest 10 percent in the income distribution is nearly constant, with the 90th percentile receiving about four-and-one-half times the income per capita of the lowest 10th percentile.

The lesser income inequality among the aged is due largely to the higher incomes of those at the bottom of the income distribution. For example, the bottom 10th percentile receives half the amount of income per capita that the median receives, and the bottom 25th percentile nearly 70 percent. As we will see later, government transfer programs are largely responsible for raising the incomes of the lowest income groups among the aged relative to the median.

### B. ADJUSTMENTS TO INCOME FOR ECONOMIES OF SCALE

While the per capita income measure is a marked improvement over the family income measure, it still has problems. Per capita income assumes that an equal amount of income is required for each additional person in order to maintain a given standard of consumption. The per capita measure does not take into account differences in economies of scale among families of different sizes, failing to recognize that many consumption goods (e.g., refrigerator) are shared within a family. Adjusting for economies of scale, fewer dollars would be required with each additional person in a family in order to maintain a given standard of living.

Figure 5.11 presents one of a number of possible ways to adjust income for economies of scale. The figure is based on per capita family income adjusted by economies of scale implied by the difference in official poverty thresholds for various sized families.[8] Although two families may actually have the same per capita income, if one is larger than the other, this procedure will relatively increase its adjusted per capita income relative to the other, because larger families have greater economies of scale in their consumption needs. The larger family's income, then, can stretch further than that of a smaller family.[9]

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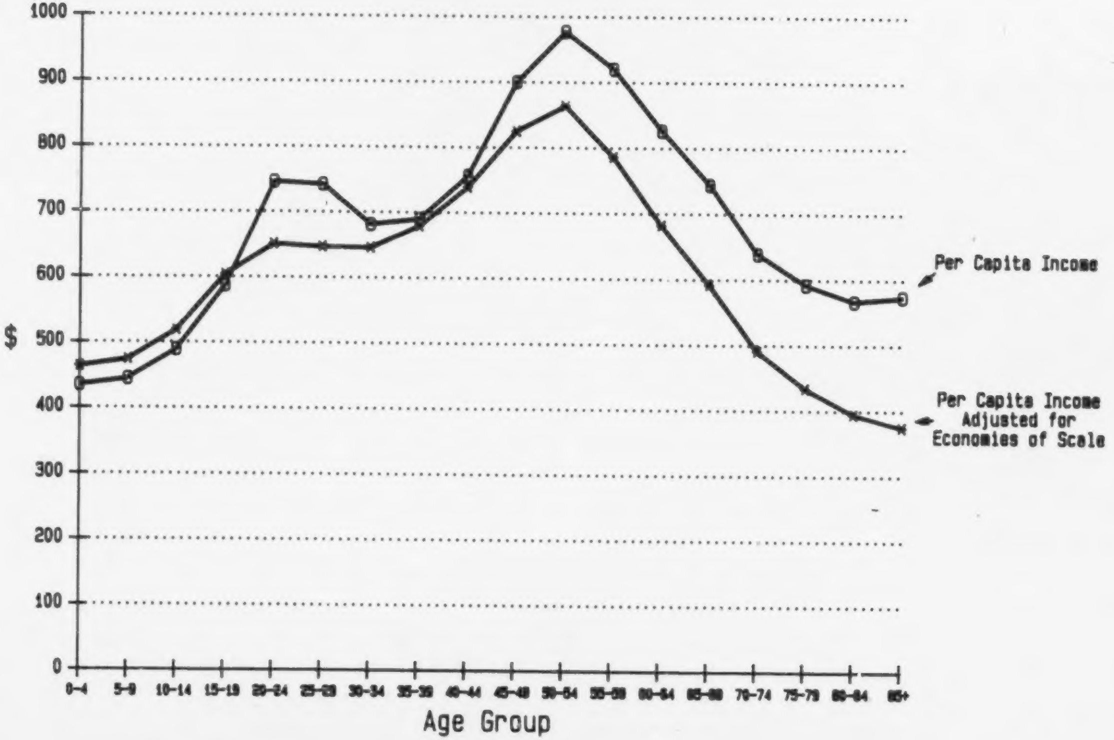
[8] The official poverty thresholds are adjusted for differences in economies of scale for different sized families. For example, the poverty threshold for a person living alone, an unrelated individual, was $5,469 in 1985, but $6,998 for a two person family, just $1,529 higher than that of a person living alone. The adjustment to per capita income for economies of scale, used here, is as follows:

Per Capita Income Adjusted for Economies of Scale=(Family's Income/Family Size)×Economy of Scale Adjustment, where Economy of Scale Adjustment=((U.S. Average Poverty Threshold)/(U.S. Average Family Size))/((Family's Poverty Threshold)/(Family Size)).

[9] Danziger, et al. find the use of the official poverty standard deficient as a basis for adjusting income for economies of scale, because it is based only upon food consumption needs for lower income persons. They argue that an alternate scale, based upon expenditures on all consumption categories, covering a wider range of income, is preferable. However, they point out that a poverty scale adjustment yields similar results to those obtained by using a "constant utility equivalence scale" estimated from the Consumer Expenditure Survey. See: Sheldon Danziger, Jacques van der Gaag, Eugene Smolensky, and Michael K. Taussig. Implications of the Relative Economic Status of the Elderly for Transfer Policy. In Henry J. Aaron and Gary Burtless (ed.). Retirement and Economic Behavior. The Brookings Institution. 1984.

FIGURE 5.11
Median Per Capita Monthly Income and
Median Per Capita Monthly Income Adjusted for
Economies of Scale, by Age: 1984



Per capita income shares of the aged are markedly lower when economies of scale are taken into account. Because so many of the aged live in one- or two-person households, more income per person is required to maintain a given level of consumption than if they lived in larger families. Figure 5.11 shows, for example, that while half of all persons age 65 to 69 have per capita incomes of $745 per month, when economies of scale are introduced, the median income per person is equivalent to $590 per month, about three-quarters of that available on an unadjusted per capita basis. For persons age 85 and older, the gap between per capita monthly income and per capita monthly income adjusted for (dis)economies of scale widens, largely because a larger proportion of those age 85 and older are likely to be widows or widowers living alone. Among those 85 and older, half had per capita monthly incomes of $575 per month or more, but half had less than $375 per month when adjusted for (dis)economies of scale, two-thirds that are attributable on a per capita basis.

The relative economic well-being of the aged compared to children differs markedly when economies of scale are taken into account. Under a per capita measure the aged appear to do better than children; under a measure which takes into account economies of scale, the aged appear to be worse off than children.

A measure that takes into account economies of scale also eliminates the trough among 30- to 39-year-olds seen in per capita income. The presence of children tends to diminish median income per capita of those in their thirties relative to both younger and older cohorts. However, when economies of scale are taken into account, persons in their thirties have median incomes per capita that are equivalent to, or higher than, the younger cohort. On average, the presence of children does not appear to diminish the income shares of those in their thirties relative to the younger cohort, due both to the higher family incomes of this group, but also due to economies of scale.

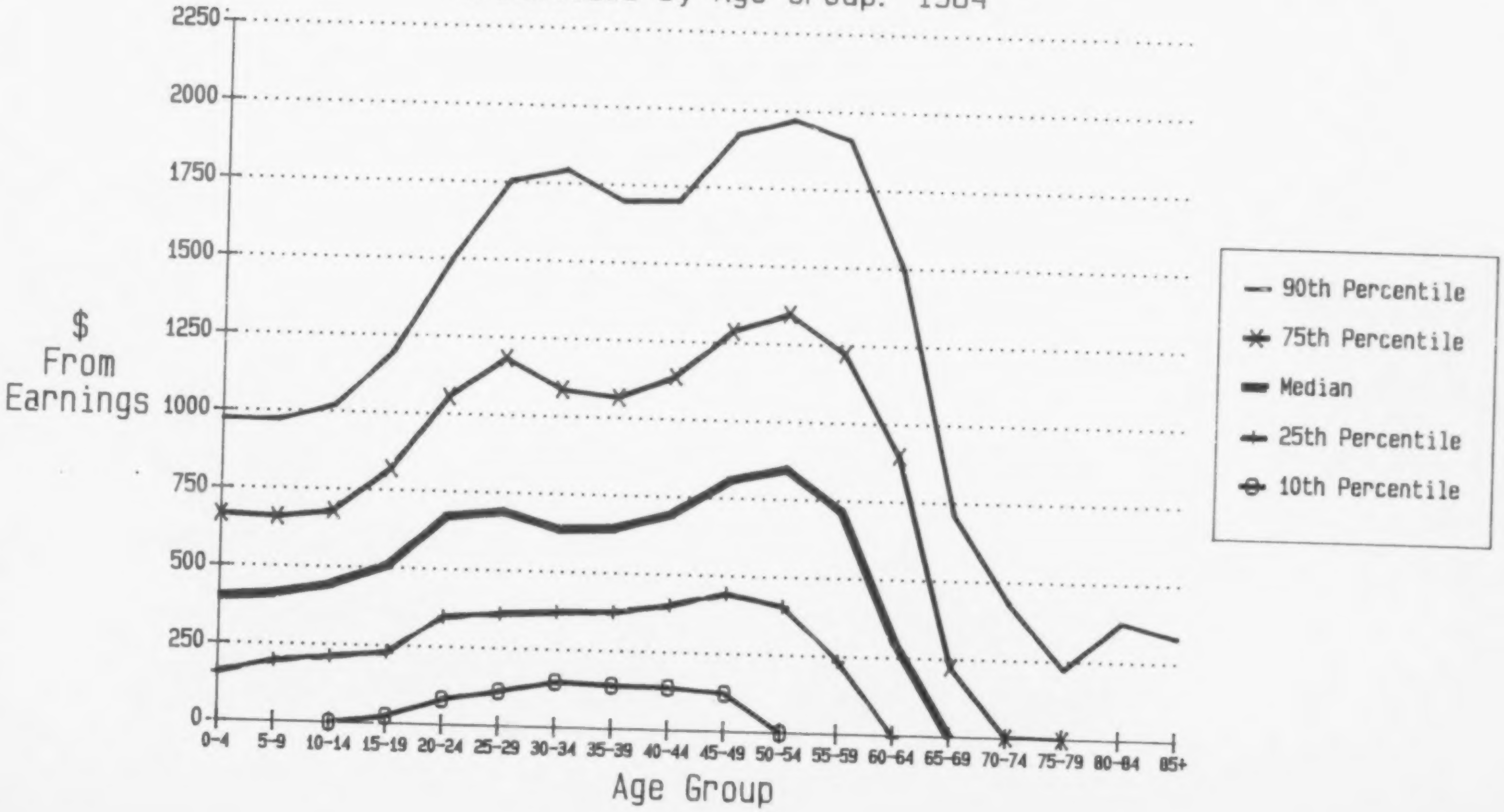
## V. SOURCES OF INCOME AND AGE

This section examines how sources of income differ by age. As one would expect, the composition of income, as well as its level, changes dramatically with age. Figures 5.12 and 5.13, respectively, show the dispersion of earnings and other income by age. The figures are derived by dividing family income equally among all family members, thereby assuming that income is shared equally among all members of the family.

Earnings are by far the predominant source of income among persons under the age of 65. Since children are dependent upon parents who work, earnings also represent the primary source of income support to children. Per capita earnings are highest among those who are between the ages 50 to 54; from that point on they are generally lower. For the 60 to 64 age group, the median value of income derived from earnings is about equal to that derived from other sources. However, it is important to realize that persons age 60 to 64 are more likely to depend on one source or the other, rather than having equal amounts of earnings and other income; it is only the age group as a whole that relies about equally on each source.

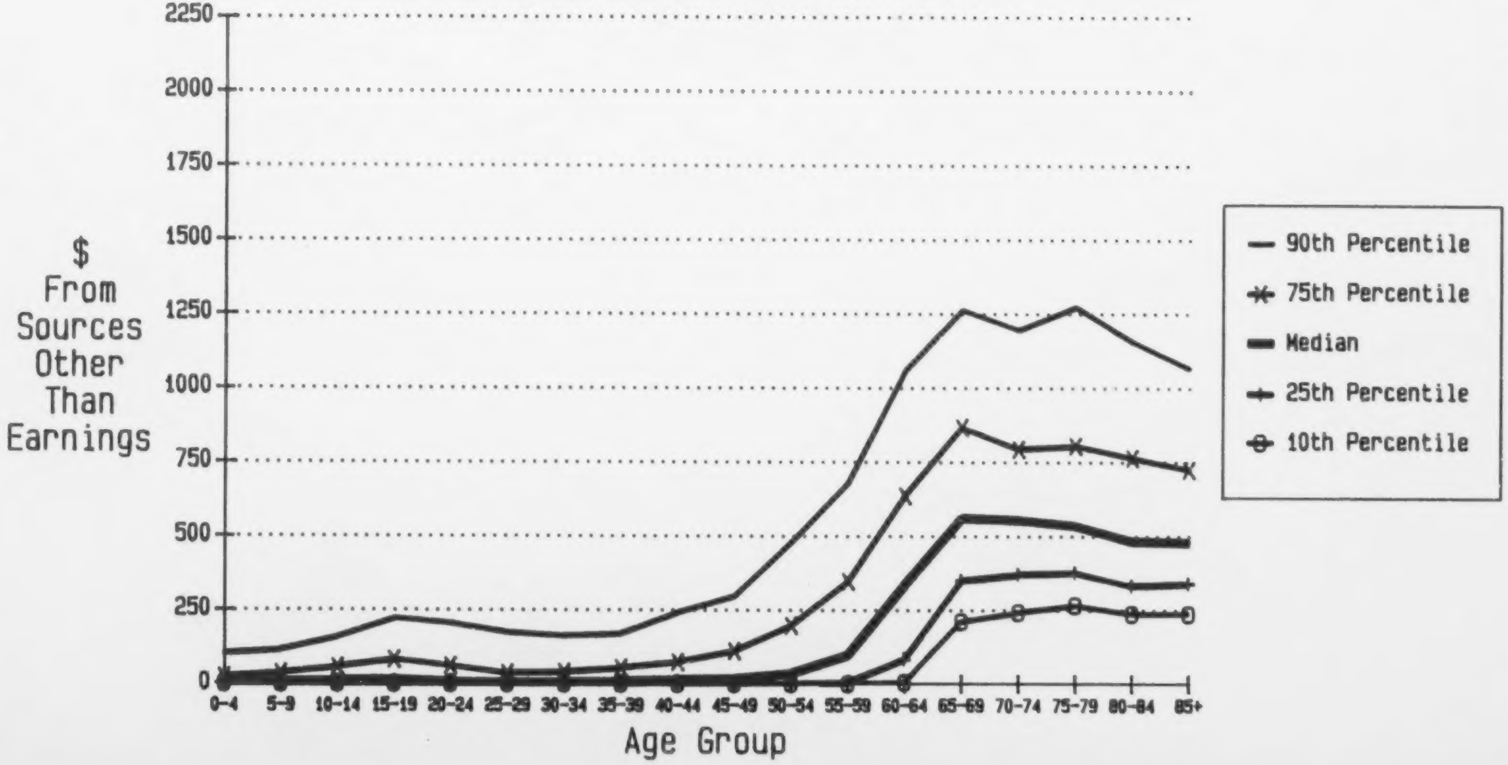
FIGURE 5.12

Average Monthly Earned Income Percapita
Percentiles by Age Group: 1984



## FIGURE 5.13

Average Monthly Income from
Sources Other than Earnings
Percentiles by Age Group: 1984



The income received from earnings declines sharply among the older age groups. At age 65 to 69, half of all persons have no income from earnings; 25 percent have $225 per month or more, and 10 percent have $715 per month or more. Among those age 70 to 74, three-quarters have no income from earnings, and one-tenth have $435 per month or more. To some degree, the earnings attributable to older persons may be their own, or they may be those of other, probably younger, family members.

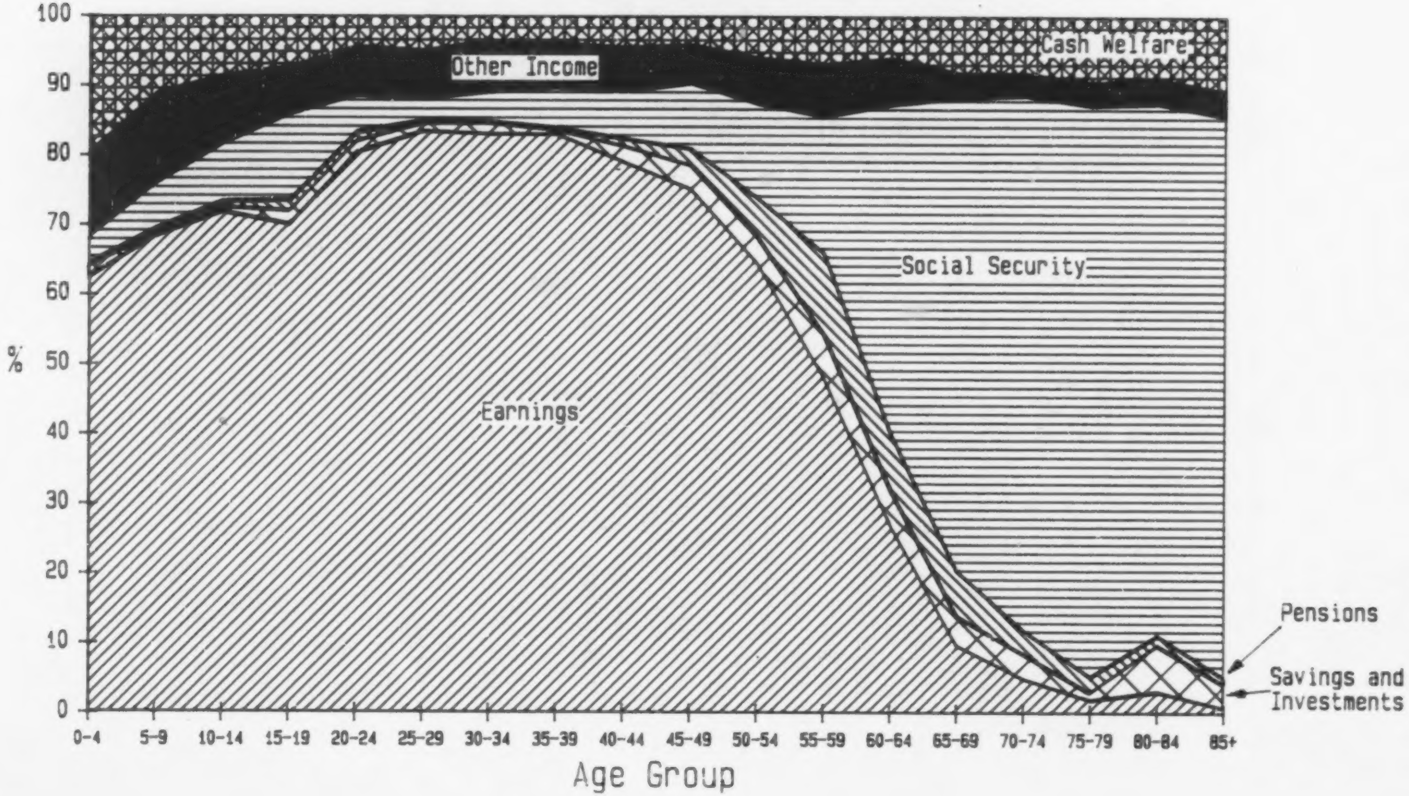
Income other than earnings increases markedly among older persons. Among those age 65 to 69, half have $560 per month or more in other income on a per capita basis; 90 percent have more than $210 per month in other income.

What are the sources of other income upon which persons of different age and income levels depend? Thus far we have only shown that the levels of earnings and other income varies by age. Figures 5.14 and 5.15 show the percent of aggregate income received by each age group by source, for the lowest and highest income quartiles in each age group, respectively.

In the lowest income quartile, social security is by far the most important souce of income support for those age 60 and above. Among those persons in the bottom forth of the income distribution, social security represents nearly half (47 percent) of the income of persons age 60 to 64, two-thirds (68 percent) that of persons age 65 to 69, and over three-quarters (77 percent) that of persons age 70 to 74. With the exception of children under the age of 10, social security accounts for a share of income among the lowest quartile that is nearly equivalent to that of cash welfare. Compared to social security, cash welfare is the next most important source of income received by those age 65 and older in the bottom income quartile, representing about 10 percent of all income received.

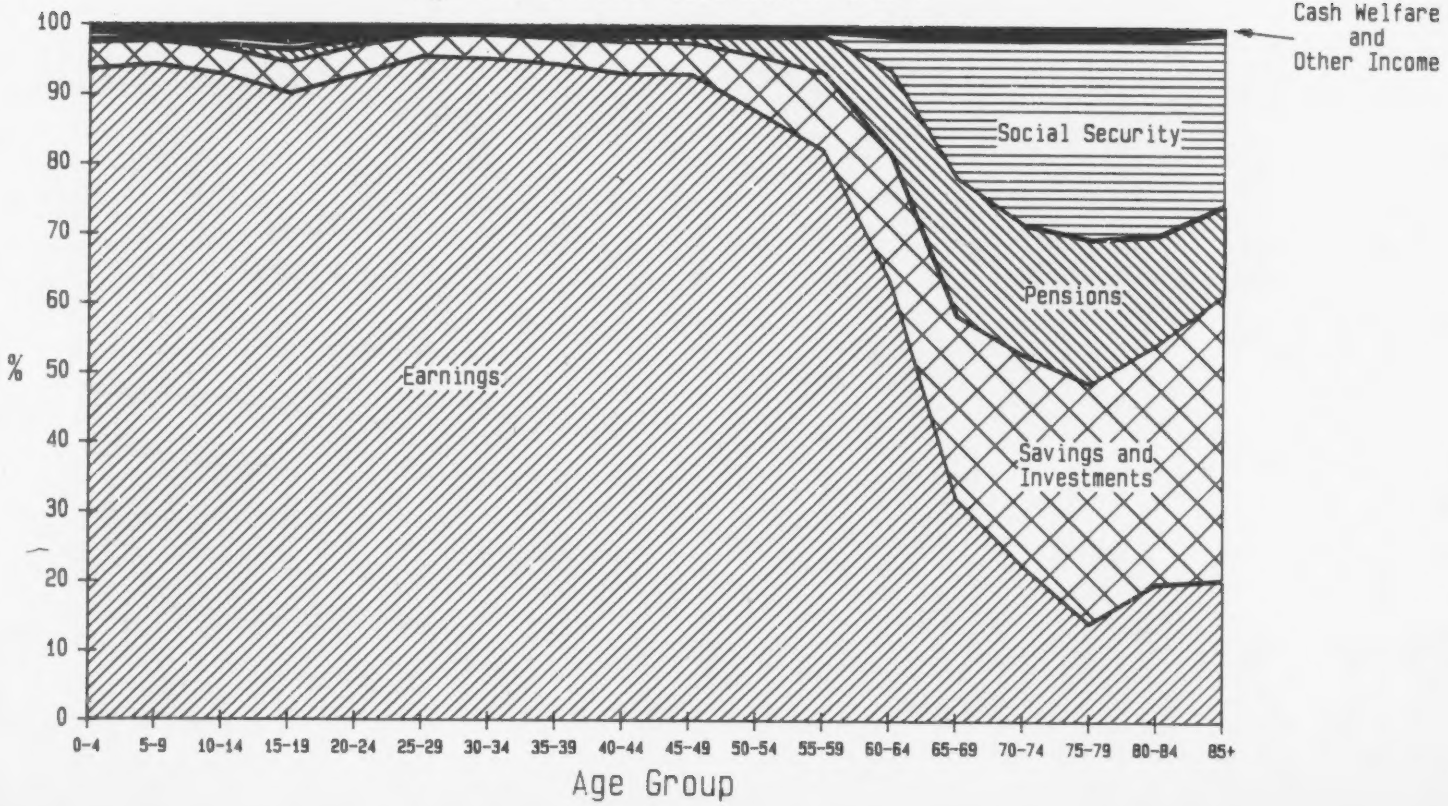
## FIGURE 5.14

Percent of Aggregate Income by Source and Age
Lowest Income Quartile: 1984



# FIGURE 5.15

Percent of Aggregate Income by Source and Age
Highest Income Quartile: 1984



The story is much different among the upper quarter of the income distribution. Income sources of the upper income quartile are much more diverse than those of the bottom quartile.

Earnings are the largest source of income received by persons age 65 to 69 in the upper fourth of the income distribution, representing one-third (32 percent) of aggregate per capita income. For those age 65 and over, earnings remain a consistently substantial portion of total aggregate income, amounting to about 20 percent for all but the age 75 to 79 year group.

Income from savings and investments is the next largest income component among the aged who are in the upper income quartile, representing about one-quarter (26 percent) of this group's aggregate income. Savings and investments as a percent of total income ranges from 30 to 40 percent of the aggregate income of the upper income quartile. However, because the distribution of savings and investment income is highly skewed, the average per capita share is likely to be much smaller than that shown in the aggregate.

Social security is an important, albeit, lesser component of aggregate income among those aged in the upper income quartile. In terms of size, social security and pension income are about equally important among the 65 to 69 age group in the upper income quartile, with each representing about 20 percent of aggregate income. Among those age 70 and older in the upper income quartile, social security represents about one-quarter of aggregate income.

The importance of pension income as a portion of aggregate income of the upper income quartile generally diminishes with age. Among those age 85 and older, pension income is a much smaller proportion of aggregate income (13 percent) for those between the ages of 65 and 84. Undoubtedly, part of the difference is due to the "younger-old" being more likely than the "older-old" to have reaped the benefits of expanded pension coverage. These issues are discussed more in chapter 9.

## VI. A MATTER OF ADEQUACY—A LOOK AT POVERTY AND AGE

Whether income is considered "adequate", or not, depends in part upon societal standards. The official definition of poverty is often used as such a standard, defining a "minimum" social standard for judging the adequacy of income. In 1986, for example, members of a four-person family were considered poor if their combined annual cash income, before taxes, was less than $11,203; a person living alone was considered poor if his or her total income during the year was less than $5,572. Poverty, as it is currently measured in the United States, is based upon a fixed market of goods, reflecting consumption standards established in the late 1950's and early 1960's. By definition, given real economic growth, the nation should eventually outgrow poverty as we know it today, all other things being equal.[10] However, in order for this to happen, it requires

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[10] Since poverty thresholds are adjusted for price changes each year, using the Consumer Price Index (CPI), poverty thresholds will drop relative to real income if there is real economic growth; conversely, poverty thresholds will rise faster than real incomes if prices rise faster than incomes. For purposes of illustration, assuming the same relative distribution of income as

Continued

that all groups share in the economic growth. Groups that have strong ties to the labor market are more likely to ride the wave of economic growth than groups with little or no attachment to the labor market (e.g., single women with young children, the aged, the disabled). Groups that are more dependent upon public assistance for their support (e.g., children in single parent families) are generally less likely to reap the benefits of economic growth, than groups, such as the aged, who depend more heavily upon social insurance (i.e., social security) for income support, in which benefits are tied to former earnings and indexed to prices.[11]

### A. POVERTY ACROSS AGE GROUPS[12]

Poverty follows an inverse relationship to that which we have seen regarding income and wealth, being highest among the aged and children, and lowest among persons who are in the middle years of life. Economic need, however, is not an absolute. Those whose incomes put them slightly above poverty may not be much better off than those whose incomes put them slightly below the poverty threshold. Thus, it is important to determine not only how many are poor, but also the severity of economic need, or the degree to which income falls short, or exceeds the poverty threshold.

Figure 5.16 shows the ratio of family income to the poverty threshold (income-to-need ratios) for persons of different ages, indicating how well off people are relative to the poverty standard. Persons in families that are considered poor will have income-to-need ratios below 1.0, those that have family incomes above poverty have income-to-need ratios greater than 1.0.

As shown in figure 5.16, the aged tend to have a lower incidence of poverty than do children. However, there are considerable differences between age groups in terms of the degree of poverty. Persons age 65 to 69 are about as likely to be poor as persons age 30 to 64; the poverty rate for persons age 65 to 69 was about 9.3 percent. The poverty rate for persons age 70 to 74 is nearly one-third higher (12.1) than that of the 65 to 69 age group. The poverty rate continues to increase with age, reaching 16.2 percent for persons age 80 to 84, and 18.7 percent for persons age 85 and over. In comparison, the average poverty rate is 23.1 percent for 0- to 4-year-olds, 22.4 percent for 5- to 9-year-olds, and 19.4 percent for 10- to 14-years-olds.

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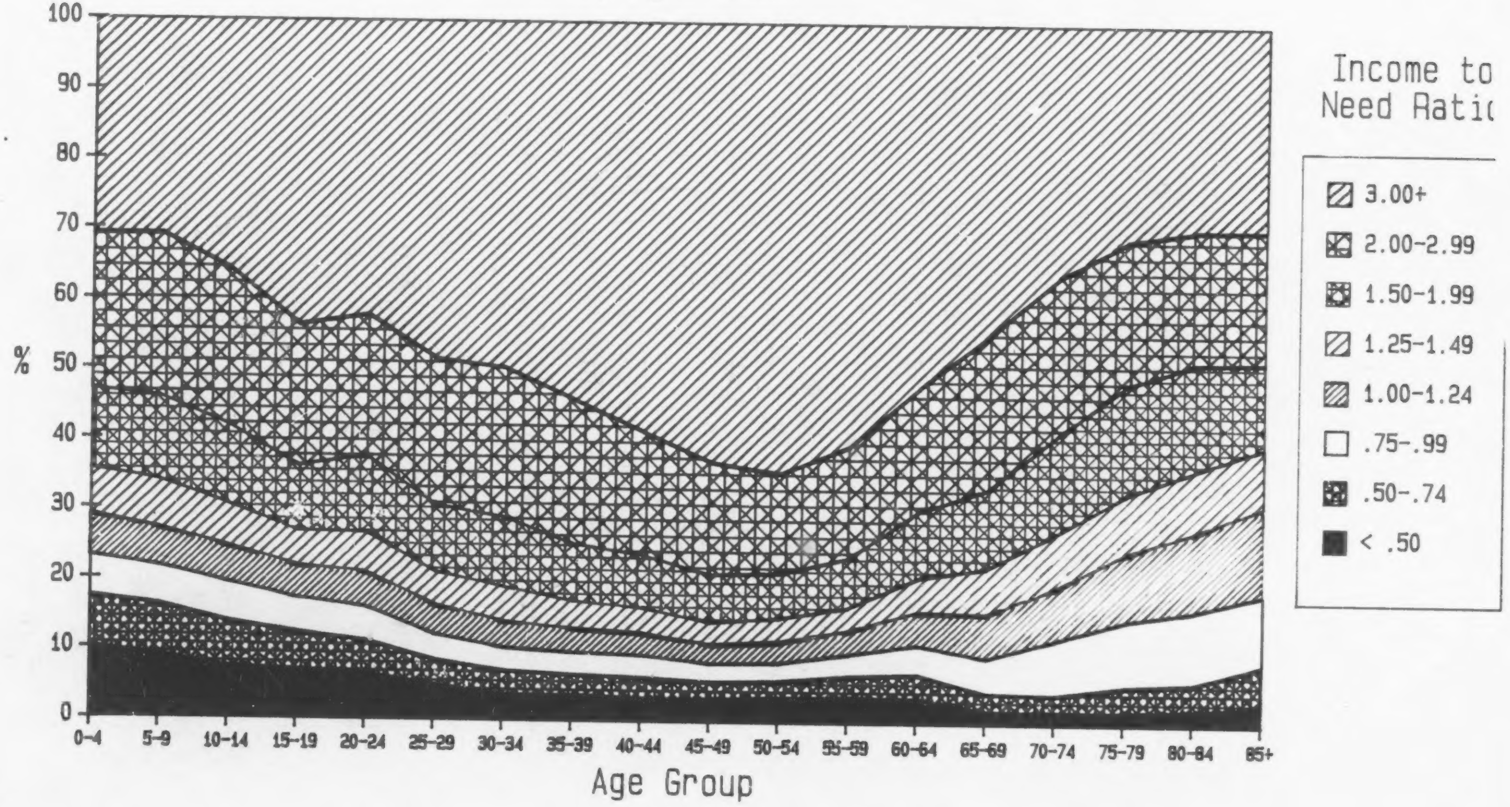
the present, a 1 percent annual rate of increase in real personal income each year in the future would result in a poverty rate that is between one-quarter and one-third lower by the year 2010, the time when the baby boom will begin to reach the age at which people are currently retiring; with a 2 percent annual rate of growth in real personal income, the poverty rate would be one-third of what it is today. Again, this assumes, among other things, that all groups share equally in economic growth.

[11] See for example, Sheldon Danziger and Peter Gottschalk. "Do Rising Tides Lift All Boats? The Impact of Secular and Cyclical Changes on Poverty." American Econcomic Review. v. 76. May 1986. pp. 405–410. Also, "Families with Children Have Fared Worst". Challenge. v. 29. Mar.–Apr., 1986. pp. 40–47.

[12] The poverty data presented in this section are original tabulations derived from the March 1986 Current Population Survey (CPS) data.

FIGURE 5.16
Ratio of Family Income to the Poverty Threshold
By Age: 1985



The aged poor are much more closely concentrated around the poverty threshold than are poor children. Of the aged *poor*, about three-fifths (61 percent) have incomes that are above three-quarters of the poverty threshold; 15 percent have incomes that put them below one-half the poverty threshold. In comparison, the poverty of children appears to be much more severe. Over two-fifths (44 percent ) of poor children age 0 to 4 live in families with incomes that are less than half the poverty threshold, and slightly under two-fifths (38 percent) of poor children age 10 to 14 are in such families.

A substantial portion of the aged, although not poor, are near being poor, having incomes only slightly above the poverty threshold. For many of the aged, a small reduction in income could put them below the poverty line. Of those persons age 65 to 69, over one-fifth (22.2 percent) have incomes less than one and one-half times the poverty threshold. Of those age 85 and above, nearly two-fifths (39.8 percent) have incomes below one and one-half times the poverty threshold.

### B. POVERTY BY RACE/ETHNICITY AND AGE[13]

The incidence of poverty is especially high among blacks and Hispanics when compared to whites. This is true at every age. Figure 5.17 shows poverty rates by age, race and ethnicity in 1985. Whereas about one out of ten (10.5 percent) of the white (and other race) non-Hispanic aged are poor, nearly one-third (31.5 percent) of black non-Hispanic aged and nearly one-quarter (23.8 percent) of Hispanic aged are poor. The incidence of poverty among black and Hispanic children is also much higher than that of white children. In 1985, 15.7 percent of the very youngest (under age 5) white (and other race non-Hispanic) children were poor, but 46.9 percent of black non-Hispanic children and 41.6 percent of Hispanic children were poor. While poverty for each racial/ethnic group is lower among non-aged adults than for either children or the aged, the differences in poverty between each racial ethnic group remain; the black non-Hispanic and Hispanic poverty rates remain between two and three times as high as those of white (and other race) non-Hispanics at each age.

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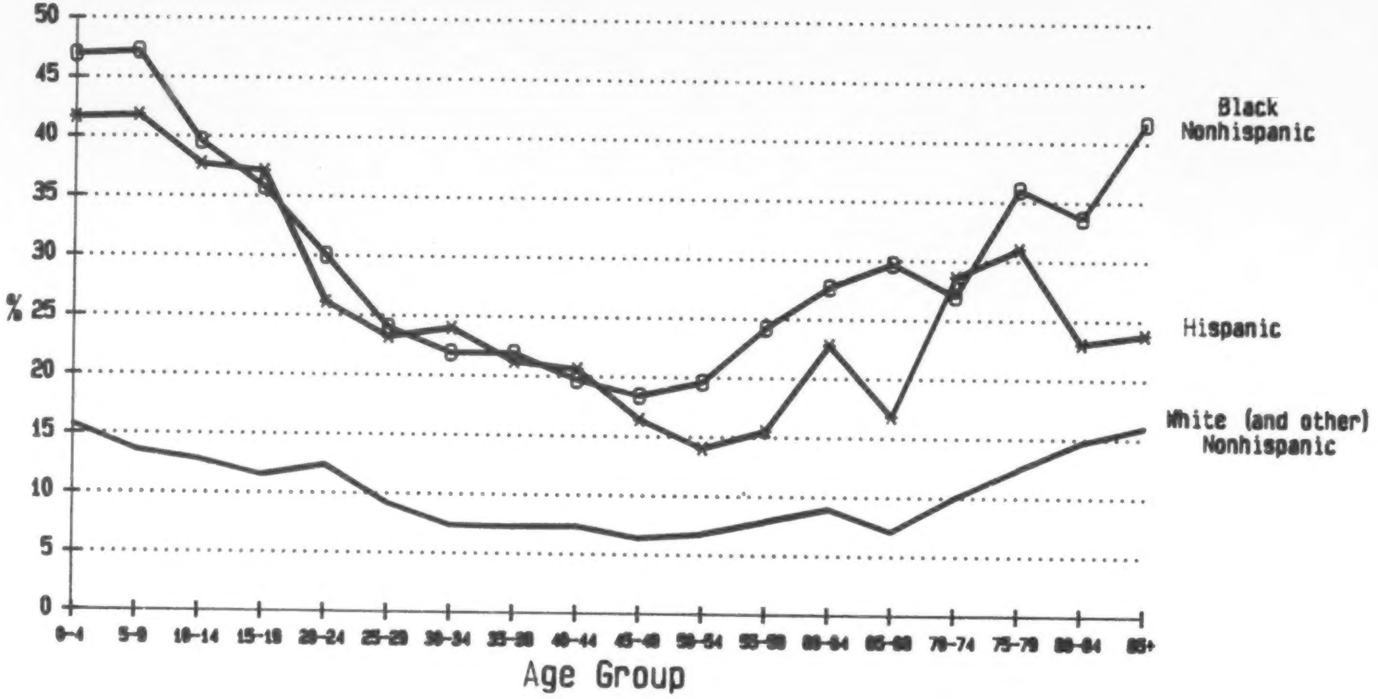
[13] Caution should be used in interpreting the Hispanic poverty rates for those above age 65, since some of the variation in poverty rates is due to sampling error associated with the small size of the CPS sample.

# FIGURE 5.17

Poverty Rates by Race/ethnicity and Age: 1985



## C. POVERTY AMONG THE AGED—DIFFERENCE BY SEX AND MARITAL STATUS

Among those aged 65 and over, there are substantial differences in the likelihood of being poor, depending on sex and marital status. Table 5.1 shows poverty rates in 1985 for persons age 65 and older by age, sex, and marital status. The incidence of poverty among aged men is about half that of aged women, 8.5 percent compared to 15.6. However, most of the difference in the incidence in poverty among aged men and women is due to differences in marital status. Comparing married men and women, the incidence of poverty is essentially the same at each age. Among aged men, poverty rates are highest among those who are never married and among widowed men age 85 and older. Among aged women, poverty rates are highest among those who are divorced or separated (27.9 percent), followed by women who are widowed (21.3 percent) and then those who are never married (18.8 percent). Aged women, overall, have higher poverty rates than aged men because over three-quarters (76.2 percent) of all aged men are married, whereas only two-fifths (39.1 percent) of aged women are married. Since over three-fifths of all aged women are not married, with many living alone, differences in economies of scale associated with the official poverty measure represent part of the reason why such a large proportion of aged women are poor. But certainly, much of the difference in poverty is due to differences in income available to widows compared to married couples.

TABLE 5.1.—POVERTY RATES AMONG PERSONS AGE 65 AND OLDER BY AGE, SEX, AND MARITAL STATUS: 1985

| | 65 and over | 65 to 74 | 75 to 84 | 85 and over |
|---|---|---|---|---|
| Male total | 8.5 | 7.5 | 9.2 | 16.6 |
| Married | 5.9 | 5.5 | 6.1 | 9.7 |
| Widowed | 14.7 | 12.5 | 13.3 | 23.6 |
| Divorced/separated | 16.4 | 14.9 | 18.9 | N/A |
| Never married | 22.8 | 19.8 | 28.0 | N/A |
| Female total | 15.6 | 13.0 | 19.2 | 19.7 |
| Married | 6.1 | 5.5 | 7.6 | 10.7 |
| Widowed | 21.3 | 19.8 | 23.4 | 20.3 |
| Divorced/separated | 27.9 | 27.4 | 31.0 | N/A |
| Never married | 18.8 | 16.5 | 20.1 | 24.2 |

Source: March 1986 Current Population Survey (CPS).

N/A—Not available due to unreliability of estimate. Percentage base represents fewer than 75,000 persons.

## D. GOVERNMENT TRANSFER PROGRAMS AND POVERTY OF THE AGED

Government transfers have a significant effect upon income and poverty of the population. This is especially true of the income and poverty status of the aged. The aged depend upon government cash transfers for a sizable share of their total income, as shown earlier. They also receive substantial benefit in the form of in-kind government transfers.

Since the early 1960s, Federal expenditures for social security, which are largely targeted toward the aged and are not based on an individual's need, have greatly outpaced other Federal cash transfer spending for the poor (see figure 5.18).[14] From fiscal year 1960 to 1986, Federal constant dollar spending on social security increased by nearly five times. Social security dwarfs Federal cash welfare expenditures (Aid to Families with Dependent Children, Supplemental Security Income, veteran's non-service connected pensions) by comparison, being eight-and-one-half times larger. Cash welfare expenditures rose by slightly over two-thirds over the period from 1960 to 1976, at which time they peaked. Other in-kind spending has also increased dramatically over the period shown; a large share of these transfers, especially Medicare ($74.2 billion in 1986) and to a lesser extent Medicaid ($23.6 billion in 1986), are directed toward the aged. In 1986, means tested in-kind spending (Food Stamps, Medicaid, and housing assistance) ($45.3 billion) exceeded means tested cash spending ($23.1 billion) by about two times.

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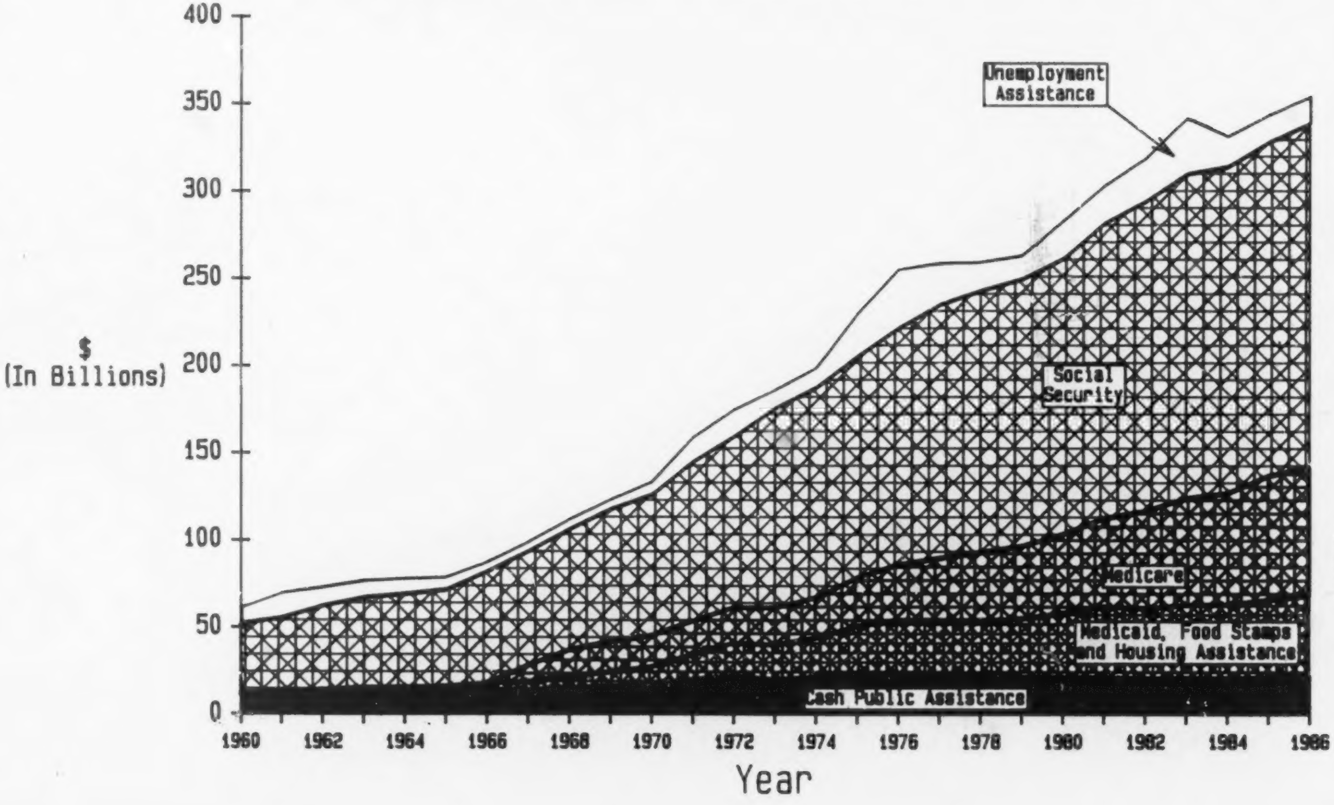
[14] See Gene Falk. Congressional Research Service. 1988 Budget Perspectives: Federal Spending for the Human Resource Programs. Feb. 11, 1987.

FIGURE 5.18

Trends in Outlays for Selected Federal Transfers
In Billions of 1986 Dollars: Fiscal Year 1960 to 1986



Clearly, government benefits such as Medicare and Medicaid, public housing, and food stamps all have a value to those who receive them, and a cost to the taxpayer as well. Figure 5.19 shows that although the aged account for only 11.5 percent of the population, they receive over half of all government cash (56 percent) and in-kind (52 percent) transfers.[15]

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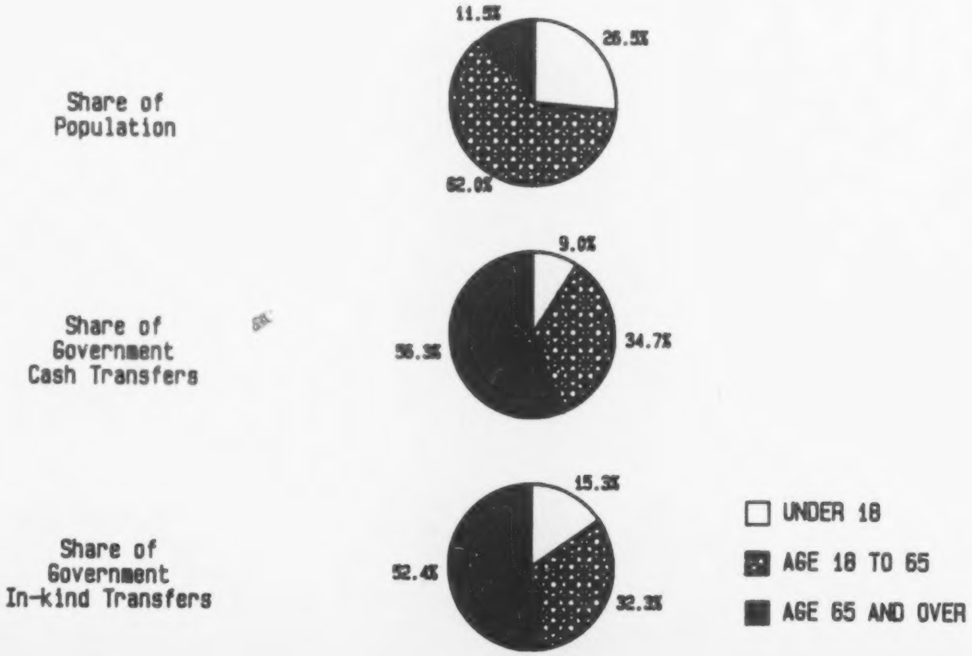
[15] Figure 5.19 is based on estimates from the March 1986 Current Population Survey. Each source of family income is equally allotted among all family members in the figure. Consequently, a portion of a benefit that, for example, may be targeted toward an aged person, such as Medicare, is shown as also going to other, perhaps younger, members of the family. In-kind benefits used in this example are shown at their market value, or estimated cost to the government. Government cash transfers shown here include: social security, unemployment compensation, veterans' payments, worker's compensation, Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), and General Assistance. Government in-kind transfers include: Medicare, Medicaid, Food Stamps, public and subsidized housing, and free and reduced-price school lunches.

FIGURE 5.19
Share of Government Cash and In-Kind Transfers
Going to the Aged, Non-Aged Adults, and Children: 1985



## E. PRE-POST TRANSFER POVERTY—THE EFFECT OF VARIOUS INCOME SOURCES ON POVERTY

There has been considerable debate on how in-kind benefits should be counted as income, and whether they should be used for estimating income poverty of persons.[16] Many argue that since in-kind benefits have grown to be such a large part of the Federal budget, and such an important part of the government's approach to providing assistance, attempts should be made to estimate their value to individuals and their effect upon reducing poverty. Some argue that only including these sources of in-kind benefits distorts perceptions of the income distribution, by only including those sources that benefit the low income population. For example, privately provided benefits, such as employer sponsored health care, company cars, and golf club memberships also have "income" value to those who receive them. However, they are difficult to measure. In addition, the value of public goods, such as highways, education, and national defense should perhaps also be valued. However, it is difficult to estimate the value of such publicly provided goods as income to individuals.

In recent years the U.S. Census Bureau has provided experimental estimates of the poverty population that assigns values to government in-kind benefits. The Census Bureau publishes a range of "unofficial" poverty estimates using a variety of methods for assigning values to in-kind benefits.[17] Selected examples are presented below to show the relative effects of inkind benefits upon those who are poor.

The importance of various income sources in reducing poverty can be seen by estimating the number of persons who would be counted as poor under alternative income definitions. Figure 5.20 shows poverty rates by age using different income concepts. For example, the percent of the population that would be counted as poor based on earned income alone is shown as the top line. The second line from the top shows the percentage counted as poor if asset income and inter-family transfers, such as alimony, child support and gifts, are added to earnings. The third line shows the percentage poor if pension income is added to those sources above.

The poverty rates shown below are dependent upon the order in which income is added. The rationale is to consider private sources of income first, then social insurance, and finally cash welfare. Cash welfare is considered last, since eligibility for welfare depends upon the other income sources available. Social insurance is treated after private sources in order to see poverty levels that would be the case if only private sources of income were counted. The reader should also be cautioned that pre-transfer poverty rates would most likely differ considerably if, for example, social security were actually not available; workers then would most probably retire later in life and save more for their own retirement. As a result, poverty based on private sources alone would most likely be lower than what is shown if only private sources were available. The bottom line provides an estimate of poverty if government in-kind transfers were valued as cash, using the poverty budget share approach.

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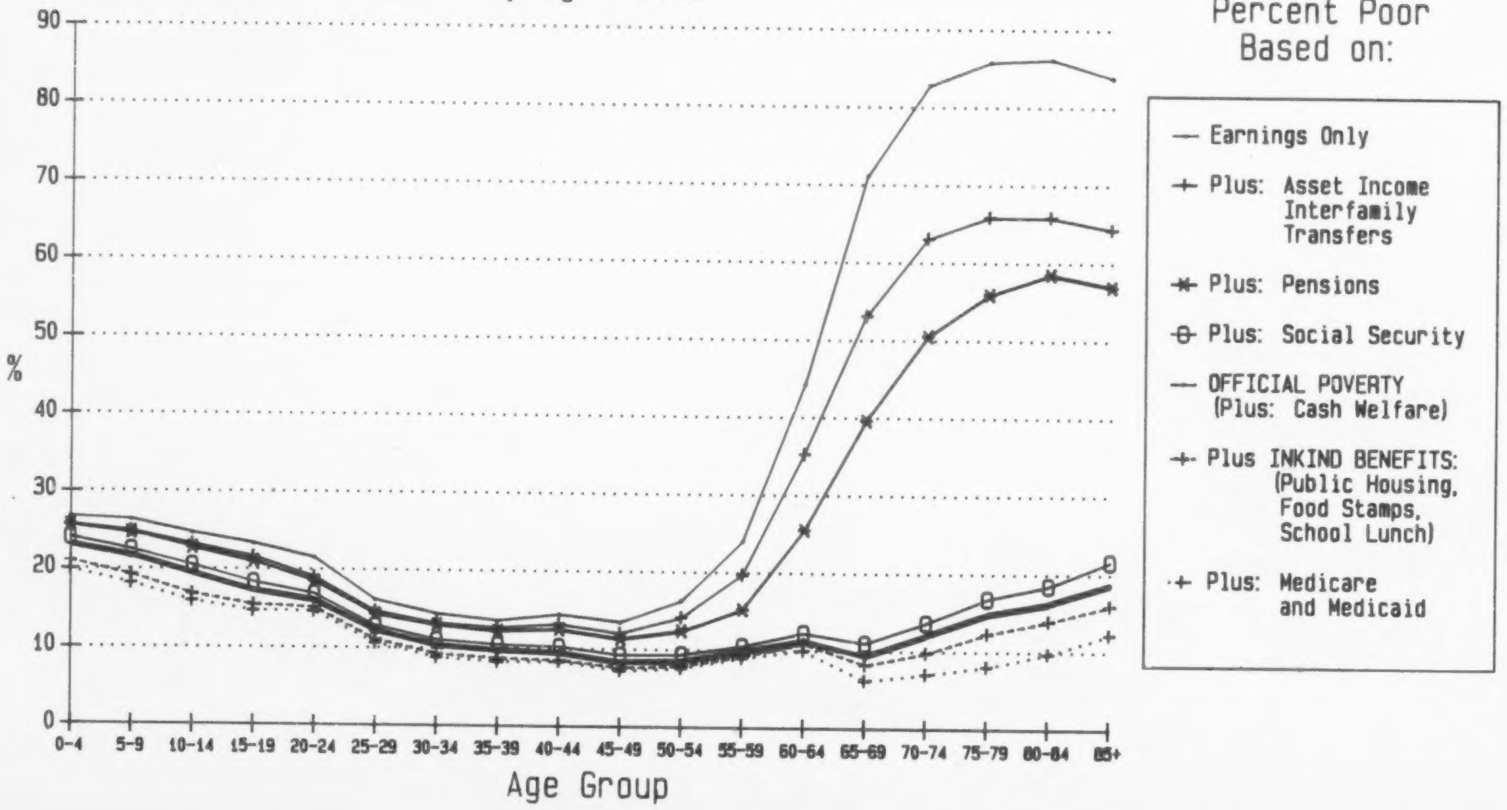
[16] See for example, U.S. Bureau of the Census. Proceedings. Vol. I. Conference on the Measurement of Noncash Benefits. Dec. 12-14, 1985.

[17] Essentially three methods are used. The first uses a market value approach, which assumes that the value of the benefit to the recipient is the same as the cost to the government. The market value approach assigns the largest value to in-kind benefits of any of the methods used. Many argue that in-kind benefits are generally not as good as cash. They argue that individuals would generally prefer an amount of cash, equal or less than the cost of the benefit, since with cash individuals may purchase any good, whereas in-kind benefits are for specific goods. The Census Bureau's recipient value approach discounts the value of the in-kind benefit to recipients in order to account for recipients' preferences for cash. Some argue further that the market value of the benefit may overstate its value to the individual if, for example, the individual is poor. For example, it is possible using the market value approach for a person who has no cash income, but is covered by the medicaid program, to be counted as non-poor; this result ignores income needs for consumption of other goods and services. The Census Bureau uses a third approach, the poverty budget share approach, to limit the value of an in-kind benefit to the amount that a poor person would normally spend on such goods if they received no subsidy.

Social Security is especially important in reducing poverty among the aged. Figure 5.20 shows, for example, that over three-quarters of those age 65 to 69 would be considered poor on the basis of earnings alone, the first dollars counted. Asset income and inter family transfers reduce the poverty rate to about two-thirds, and private and government pensions reduce the rate further, to about 45 percent. Social security reduces the poverty rate sharply, from 45 percent to just above 10 percent, and lastly, cash welfare, the last dollars counted, reduces poverty only slightly, to 8.4 percent.

Regardless of the measure used, in 1985 the reduction in poverty by including in-kind benefits, is greater for persons age 65 and over than for other age groups. Figure 5.20 shows the effect on poverty when food stamps, free and reduced price school lunches, public housing, Medicaid and Medicare are counted as income against the poverty threshold, using the poverty budget share approach. When just food and housing benefits are added to total family income, poverty among the aged is reduced from the official rate of 12.6 percent to 10.7 percent, a 15 percent decrease. When the insurance value of medical benefits is included, the poverty rate declines to 7.6 percent, a 40 percent decrease. The effect of in-kind benefits on the reduction of poverty among children is much smaller than that of the aged. Among children, all in-kind benefits valued at their poverty budget share values reduce poverty from the official rate of 23.1 percent for children under age 5 to 19.9 percent, a 14 percent decrease; for children age 10 to 14, in-kind benefits reduce the poverty rate from the official rate of 19.5 percent to 15.9 percent, an 18 percent decrease. It should be remembered that the use of in-kind benefits for estimating poverty is controversial, and that these estimates are experimental.

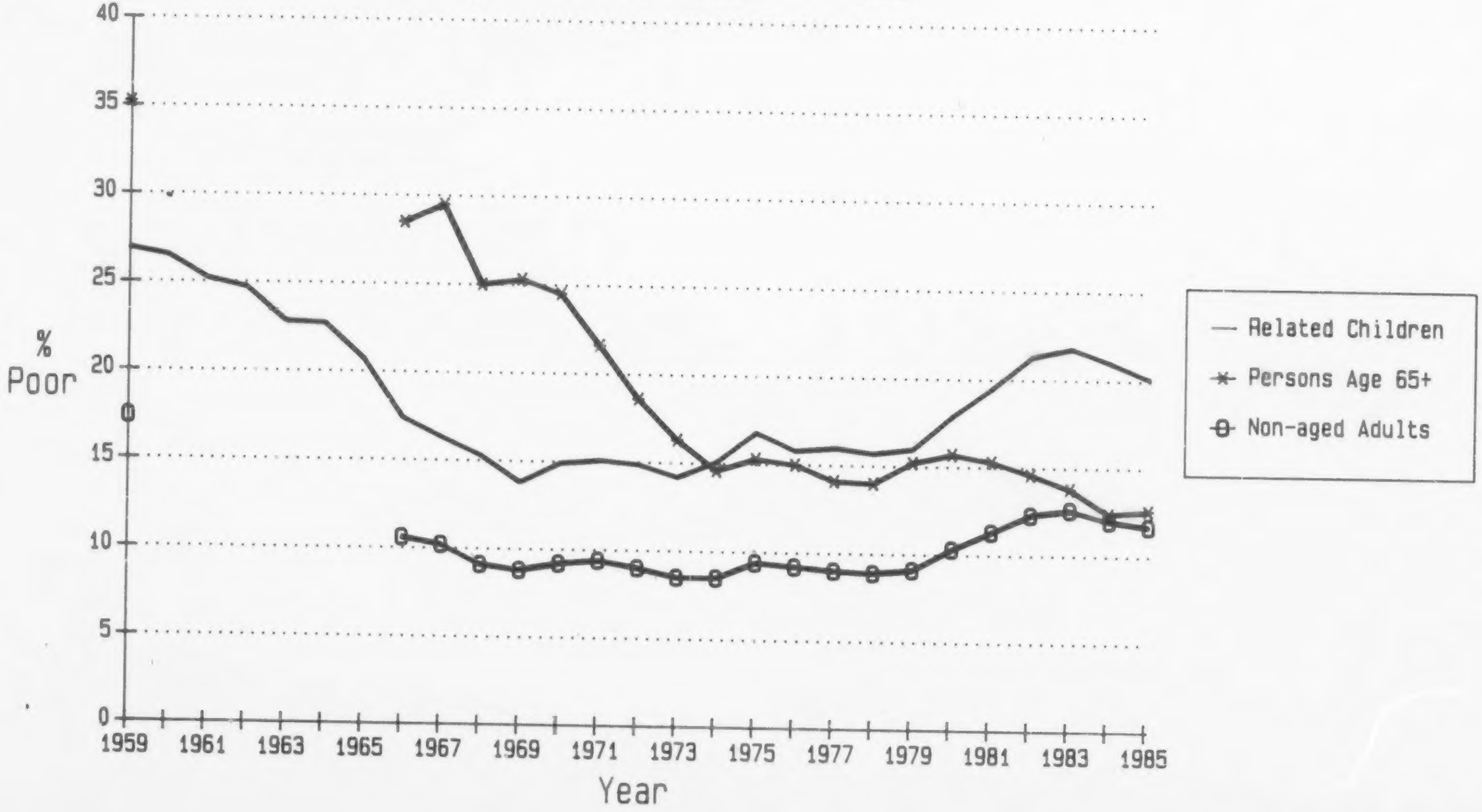
FIGURE 5.20
Pre-Post Transfer Poverty Rates
By Age: 1985



### F. THE HISTORICAL TREND IN POVERTY

As we have seen, the incidence of poverty varies considerably among persons of different age groups. Compared to children, the aged are much less likely to be poor, but about as likely to be "near poor" (e.g., having incomes above the poverty threshold but below 125 percent of the poverty threshold). However, this has not always been the case. In 1959, more than one in three persons age 65 and over (35.3 percent) was considered poor under the official definition, a rate nearly one-third higher than that of children (see figure 5.21). By 1985 the poverty rate among the aged had dropped by nearly two-thirds, to about 12.6 percent of the aged population (see figure 5.21). Until 1974, the poverty rate of the aged exceeded that of children. Since that time, the poverty rate of the aged has remained below that of children, with the gap having widened with time. Contrary to the trend in poverty among children and non-aged adults, the incidence of poverty among the aged was declining during the period from 1980 to 1984, while it was increasing for children and non-aged adults. As shown earlier, social security outlays have risen substantially in recent years. Undoubtedly these benefits have had an important impact upon reducing poverty among the aged; social security helped to reduce poverty among the aged during the most recent recessions, when it was rising for children and non-aged adults.

FIGURE 5.21
Poverty Rates for the Aged, Children, and Non-aged Adults: 1959 to 1985



## VII. INCOME, WEALTH AND POVERTY IN THE FUTURE

A number of difficult questions about income, wealth and poverty in the future arise. The questions elude simple answers. How rapid will future economic growth be? What will be each member's claim to income in the future? How will standards for judging income adequacy change in the future given a presumed increase in national wealth? Will the future aged depend upon the same sources of income to the same relative degree as today's aged, or will they be required to save more for their own retirement? How might the distribution of income change in the future, both among the aged, and between the aged and others in society? Will the economic position of aged women improve over what it is today? And what of retirement in the future? Are individuals likely to retire later in life in order to help assure a desired income level during retirement? For those who own their own homes, will new mechanisms be in place to help them convert home equity into cash without having to out-and-out sell their homes? What will happen to those who don't own their own homes, and have little in the way of other accumulated assets upon which to retire? What sort of retirement incomes will they have? And lastly, what about children? One-fifth of all children, and two-fifths of all black and Hispanic children, now live in families having incomes below the official poverty line. What will these children contribute to future economic growth as they come of working age? What will they contribute to the income support of the baby boom during its retirement?

## APPENDIX: SUPPORT TABLES FOR FIGURES

### SUPPORT TABLE FOR FIGURE 5.1.—AVERAGE MONTHLY TOTAL FAMILY INCOME PERCENTILES BY AGE OF HOUSEHOLDER: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 15 to 19 | $150 | $400 | $878 | $1,692 | $2,772 |
| 20 to 24 | 358 | 755 | 1,255 | 2,084 | 3,001 |
| 25 to 29 | 456 | 1,002 | 1,671 | 2,458 | 3,366 |
| 30 to 34 | 646 | 1,260 | 2,008 | 2,928 | 3,925 |
| 35 to 39 | 683 | 1,380 | 2,273 | 3,270 | 4,521 |
| 40 to 44 | 719 | 1,509 | 2,526 | 3,734 | 5,019 |
| 45 to 49 | 737 | 1,534 | 2,625 | 3,971 | 5,641 |
| 50 to 54 | 668 | 1,424 | 2,526 | 3,919 | 5,527 |
| 55 to 59 | 565 | 1,138 | 2,203 | 3,578 | 5,371 |
| 60 to 64 | 530 | 979 | 1,761 | 2,876 | 4,555 |
| 65 to 69 | 464 | 803 | 1,311 | 2,135 | 3,298 |
| 70 to 74 | 385 | 583 | 1,041 | 1,690 | 2,747 |
| 75 to 79 | 386 | 547 | 918 | 1,596 | 2,565 |
| 80 to 84 | 348 | 473 | 818 | 1,318 | 2,234 |
| 85 plus | 334 | 426 | 687 | 1,118 | 2,107 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.2.—MEAN INCOME OF HOUSEHOLDS AND INCOME PER HOUSEHOLD MEMBER BEFORE AND AFTER TAXES, BY AGE: 1984

| | Age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15 to 25 | 26 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 plus |
| Mean household income: | | | | | | | | | | |
| Before taxes | $16,644 | $24,509 | $27,729 | $32,273 | $34,761 | $36,393 | $35,603 | $33,366 | $27,660 | $18,279 |
| After taxes | 13,723 | 19,333 | 21,643 | 24,770 | 26,591 | 27,765 | 27,104 | 25,319 | 21,553 | 15,745 |
| Income per household member: | | | | | | | | | | |
| Before taxes | 7,151 | 9,260 | 9,056 | 9,459 | 9,869 | 11,042 | 11,881 | 12,976 | 12,608 | 10,316 |
| After taxes | 5,896 | 7,304 | 7,069 | 7,260 | 7,550 | 8,424 | 9,045 | 9,846 | 9,824 | 8,886 |

Source: Data from U.S. Bureau of the Census, current population reports, series P–23, No. 147, "After-Tax Money Income Estimates of Households: 1984," Table 3, p. 29.

## SUPPORT TABLE FOR FIGURE 5.3.—AVERAGE TAX RATE BY HOUSEHOLDER AGE AND BEFORE-TAX INCOME LEVEL: 1984

| Income bracket | 15 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 plus |
|---|---|---|---|---|---|---|---|---|---|---|
| $5,000 to $7,499 | 5.2 | 3.8 | 4.3 | 6.5 | 6.3 | 7.8 | 9.0 | 9.1 | 6.9 | 4.3 |
| $10,000 to $12,499 | 12.5 | 12.7 | 12.3 | 11.7 | 11.6 | 12.4 | 14.2 | 13.8 | 10.1 | 5.0 |
| $12,500 to $14,999 | 14.3 | 14.5 | 14.2 | 14.1 | 13.8 | 15.4 | 15.5 | 15.2 | 11.3 | 6.2 |
| $20,000 to $22,499 | 18.1 | 18.7 | 18.6 | 18.0 | 17.6 | 17.9 | 17.7 | 18.5 | 15.4 | 9.5 |
| $30,000 to $32,499 | 21.1 | 21.4 | 21.3 | 21.3 | 21.0 | 20.8 | 21.5 | 20.9 | 19.9 | 13.7 |
| $50,000 to $59,999 | n/a | 25.8 | 25.7 | 25.7 | 25.4 | 24.6 | 24.4 | 24.9 | 25.6 | 20.8 |
| $75,000 and over | n/a | 30.8 | 30.7 | 32.6 | 31.3 | 30.7 | 30.5 | 31.6 | 31.7 | 32.7 |
| Total | 17.5 | 21.1 | 21.9 | 23.2 | 23.5 | 23.7 | 23.9 | 24.1 | 22.1 | 13.9 |

Source: Figures adapted from U.S. Bureau of the Census, current population reports, series P–23, No. 147, "After-Tax Money Income Estimates of Households: 1984," table 1. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.4.—TOTAL NET WORTH PERCENTILES BY AGE OF HOUSEHOLDER: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 15 to 19 | −$690 | 0 | $730 | 3,720 | $12,594 |
| 20 to 24 | −1,300 | 0 | 2,440 | 8,006 | 19,233 |
| 25 to 29 | −1,095 | $542 | 5,300 | 19,250 | 45,357 |
| 30 to 34 | −167 | 1,700 | 13,665 | 41,470 | 79,756 |
| 35 to 39 | 0 | 4,850 | 28,320 | 68,124 | 130,173 |
| 40 to 44 | 650 | 11,364 | 45,825 | 92,000 | 177,598 |
| 45 to 49 | 520 | 13,500 | 52,341 | 105,344 | 197,225 |
| 50 to 54 | 600 | 19,618 | 64,475 | 123,105 | 220,835 |
| 55 to 59 | 1,600 | 25,401 | 72,125 | 139,649 | 250,441 |
| 60 to 64 | 3,020 | 29,000 | 72,588 | 135,756 | 242,850 |
| 65 to 69 | 1,075 | 25,386 | 65,849 | 126,099 | 223,560 |
| 70 to 74 | 528 | 18,000 | 59,885 | 112,196 | 197,767 |
| 75 to 79 | 999 | 18,200 | 58,200 | 114,990 | 190,918 |
| 80 to 84 | 683 | 15,479 | 52,070 | 102,900 | 162,673 |
| 85 plus | 400 | 14,649 | 47,599 | 100,439 | 160,400 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.5.—MEDIAN TOTAL HOUSEHOLD NET WORTH BY ANNUAL INCOME AND HOUSEHOLDER'S AGE: 1984

| Income bracket | All householders | Householders age 25 to 44 | Householders age 45 to 64 | Householders age 65 and over |
|---|---|---|---|---|
| Negative | $1,255 | $1,942 | $5,000 | $32,240 |
| $1 to $4,999 | 1,177 | 321 | 3,020 | 10,349 |
| $5,000 to $9,999 | 8,050 | 750 | 19,899 | 28,835 |
| $10,000 to $14,999 | 18,000 | 3,700 | 37,125 | 60,000 |
| $15,000 to $19,999 | 22,650 | 7,450 | 42,450 | 82,375 |
| $20,000 to $24,999 | 28,611 | 14,225 | 54,875 | 94,816 |
| $25,000 to $29,999 | 32,395 | 18,200 | 63,200 | 128,015 |
| $30,000 to $34,999 | 43,400 | 27,400 | 73,206 | 152,449 |
| $35,000 to $39,999 | 54,983 | 39,728 | 75,714 | 165,249 |
| $40,000 to $44,999 | 61,025 | 40,748 | 80,574 | 169,923 |
| $45,000 to $49,999 | 67,941 | 51,995 | 84,125 | 170,536 |
| $50,000 to $74,999 | 98,100 | 68,475 | 118,995 | 228,559 |
| $75,000 to $99,999 | 160,548 | 128,341 | 168,258 | 316,700 |
| $100,000 and over | 265,275 | 195,827 | 324,871 | 507,100 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.6.—COMPARISON OF MEDIAN HOUSEHOLD NET WORTH, HOME EQUITY, AND NET WORTH LESS HOME EQUITY: 1984

| Age | Median total net worth | Median home equity | Median total net worth less home equity |
|---|---|---|---|
| 15 to 19 | $730 | 0 | $600 |
| 20 to 24 | 2,440 | 0 | 1,820 |
| 25 to 29 | 5,300 | 0 | 2,828 |
| 30 to 34 | 13,665 | $2,500 | 4,350 |
| 35 to 39 | 28,320 | 17,500 | 6,260 |
| 40 to 44 | 45,825 | 28,000 | 9,836 |
| 45 to 49 | 52,341 | 31,999 | 11,040 |
| 50 to 54 | 64,475 | 40,000 | 15,100 |
| 55 to 59 | 72,125 | 40,000 | 21,550 |
| 60 to 64 | 72,588 | 43,250 | 21,877 |
| 65 to 69 | 65,849 | 38,000 | 21,111 |
| 70 to 74 | 59,885 | 30,000 | 18,399 |
| 75 to 79 | 58,200 | 28,000 | 20,000 |
| 80 to 84 | 52,070 | 30,000 | 12,338 |
| 85 plus | 47,599 | 25,000 | 14,790 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.7.—HOME EQUITY PERCENTILES BY AGE OF HOUSEHOLDER: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 15 to 19 | 0 | 0 | 0 | 0 | $953 |
| 20 to 24 | 0 | 0 | 0 | 0 | 7,777 |
| 25 to 29 | 0 | 0 | 0 | $9,000 | 25,000 |
| 30 to 34 | 0 | 0 | $2,500 | 25,000 | 49,000 |
| 35 to 39 | 0 | 0 | 17,500 | 43,000 | 71,000 |
| 40 to 44 | 0 | 0 | 28,000 | 57,500 | 92,375 |
| 45 to 49 | 0 | 0 | 31,999 | 60,000 | 98,000 |
| 50 to 54 | 0 | $6,000 | 40,000 | 70,000 | 100,000 |
| 55 to 59 | 0 | 7,000 | 40,000 | 70,000 | 105,000 |
| 60 to 64 | 0 | 8,000 | 43,250 | 71,000 | 101,999 |
| 65 to 69 | 0 | 6,000 | 38,000 | 60,000 | 90,000 |
| 70 to 74 | 0 | 0 | 30,000 | 60,000 | 92,000 |
| 75 to 79 | 0 | 0 | 28,000 | 52,000 | 82,000 |
| 80 to 84 | 0 | 0 | 30,000 | 50,000 | 75,000 |
| 85 plus | 0 | 0 | 25,000 | 45,500 | 70,000 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.8.—NET WORTH LESS HOME EQUITY PERCENTILES BY AGE OF HOUSEHOLDER: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 15 to 19 | –$751 | 0 | $600 | $3,486 | $8,875 |
| 20 to 24 | –1,545 | 0 | 1,820 | 5,358 | 11,700 |
| 25 to 29 | –2,084 | $40 | 2,828 | 8,575 | 20,592 |
| 30 to 34 | –1,479 | 500 | 4,350 | 13,100 | 35,997 |
| 35 to 39 | –1,200 | 939 | 6,260 | 22,399 | 68,638 |
| 40 to 44 | –250 | 1,727 | 9,836 | 34,449 | 96,875 |
| 45 to 49 | –882 | 2,137 | 11,040 | 42,691 | 116,879 |
| 50 to 54 | –348 | 2,250 | 15,100 | 55,300 | 136,933 |
| 55 to 59 | 0 | 3,455 | 21,550 | 66,800 | 154,575 |
| 60 to 64 | 115 | 4,050 | 21,877 | 65,500 | 161,374 |
| 65 to 69 | 0 | 3,000 | 21,111 | 68,098 | 148,194 |
| 70 to 74 | 0 | 2,300 | 18,399 | 56,961 | 116,700 |
| 75 to 79 | 0 | 2,878 | 20,000 | 63,500 | 113,700 |
| 80 to 84 | 30 | 1,610 | 12,338 | 52,868 | 108,399 |
| 85 plus | 0 | 1,563 | 14,790 | 55,224 | 113,417 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.9.—AVERAGE MONTHLY TOTAL PER CAPITA INCOME PERCENTILES BY AGE GROUP: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 0 to 4 | $16 | $207 | $434 | $699 | $1,020 |
| 5 to 9 | 60 | 237 | 444 | 690 | 1,016 |
| 10 to 14 | 100 | 272 | 486 | 734 | 1,076 |
| 15 to 19 | 121 | 310 | 585 | 906 | 1,277 |
| 20 to 24 | 172 | 419 | 742 | 1,121 | 1,569 |
| 25 to 29 | 196 | 414 | 739 | 1,243 | 1,806 |
| 30 to 34 | 235 | 422 | 681 | 1,134 | 1,846 |
| 35 to 39 | 219 | 420 | 690 | 1,133 | 1,765 |
| 40 to 44 | 250 | 478 | 756 | 1,194 | 1,788 |
| 45 to 49 | 275 | 543 | 900 | 1,361 | 2,025 |
| 50 to 54 | 306 | 568 | 977 | 1,465 | 2,185 |
| 55 to 59 | 305 | 548 | 920 | 1,440 | 2,134 |
| 60 to 64 | 326 | 513 | 826 | 1,283 | 1,984 |
| 65 to 69 | 340 | 500 | 744 | 1,098 | 1,577 |
| 70 to 74 | 320 | 446 | 639 | 936 | 1,453 |
| 75 to 79 | 307 | 417 | 592 | 925 | 1,440 |
| 80 to 84 | 302 | 391 | 567 | 871 | 1,308 |
| 85 plus | 300 | 393 | 574 | 857 | 1,356 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.10.—AVERAGE MONTHLY PER CAPITA INCOME PERCENTILES AS A PERCENTAGE OF THE MEDIAN, BY AGE: 1984

| Age | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 0 to 4 | 3.7 | 47.6 | 100.0 | 161.0 | 235.0 |
| 5 to 9 | 13.5 | 53.3 | 100.0 | 155.2 | 228.6 |
| 10 to 14 | 20.6 | 56.0 | 100.0 | 150.9 | 221.3 |
| 15 to 19 | 20.6 | 53.0 | 100.0 | 154.9 | 218.3 |
| 20 to 24 | 23.1 | 56.5 | 100.0 | 151.1 | 211.4 |
| 25 to 29 | 26.5 | 56.0 | 100.0 | 168.1 | 244.2 |
| 30 to 34 | 34.5 | 61.9 | 100.0 | 166.5 | 271.0 |
| 35 to 39 | 31.7 | 60.8 | 100.0 | 164.1 | 255.7 |
| 40 to 44 | 33.0 | 63.2 | 100.0 | 157.9 | 236.5 |
| 45 to 49 | 30.6 | 60.3 | 100.0 | 151.3 | 225.0 |
| 50 to 54 | 31.3 | 58.2 | 100.0 | 150.0 | 223.7 |
| 55 to 59 | 33.1 | 59.6 | 100.0 | 156.5 | 231.9 |
| 60 to 64 | 39.5 | 62.1 | 100.0 | 155.2 | 240.2 |
| 65 to 69 | 45.7 | 67.1 | 100.0 | 147.5 | 211.9 |
| 70 to 74 | 50.1 | 69.9 | 100.0 | 146.6 | 227.6 |
| 75 to 79 | 51.9 | 70.4 | 100.0 | 156.3 | 243.2 |
| 80 to 84 | 53.2 | 69.0 | 100.0 | 153.7 | 230.9 |
| 85 plus | 52.3 | 68.5 | 100.0 | 149.4 | 236.5 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.11.—MEDIAN PER CAPITA MONTHLY INCOME AND MEDIAN PER CAPITA, MONTHLY INCOME ADJUSTED FOR ECONOMIES OF SCALE, BY AGE: 1984

| Age | Median per capita income | Median per capita income adjusted for economies of scale |
|---|---|---|
| 0 to 4 | $434 | $463 |
| 5 to 9 | 444 | 474 |
| 10 to 14 | 489 | 519 |
| 15 to 19 | 587 | 604 |
| 20 to 24 | 746 | 651 |
| 25 to 29 | 742 | 647 |
| 30 to 34 | 681 | 646 |
| 35 to 39 | 690 | 679 |
| 40 to 44 | 756 | 739 |
| 45 to 49 | 900 | 825 |
| 50 to 54 | 977 | 864 |
| 55 to 59 | 920 | 786 |
| 60 to 64 | 826 | 682 |
| 65 to 69 | 744 | 592 |
| 70 to 74 | 639 | 491 |
| 75 to 79 | 592 | 434 |
| 80 to 84 | 567 | 395 |
| 85 plus | 574 | 375 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.12.—AVERAGE MONTHLY INCOME PER CAPITA, PERCENTILES BY AGE GROUP: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 0 to 4 | 0 | $160 | $400 | $668 | $976 |
| 5 to 9 | 0 | 200 | 413 | 661 | 974 |
| 10 to 14 | 0 | 216 | 446 | 683 | 1,025 |
| 15 to 19 | $24 | 233 | 512 | 823 | 1,200 |
| 20 to 24 | 82 | 351 | 670 | 1,058 | 1,500 |
| 25 to 29 | 113 | 365 | 692 | 1,186 | 1,756 |
| 30 to 34 | 147 | 375 | 638 | 1,089 | 1,798 |
| 35 to 39 | 139 | 379 | 646 | 1,069 | 1,700 |
| 40 to 44 | 138 | 406 | 697 | 1,140 | 1,706 |
| 45 to 49 | 123 | 448 | 809 | 1,290 | 1,924 |
| 50 to 54 | 0 | 410 | 850 | 1,350 | 1,974 |
| 55 to 59 | 0 | 239 | 717 | 1,225 | 1,913 |
| 60 to 64 | 0 | 0 | 300 | 900 | 1,500 |
| 65 to 69 | 0 | 0 | 0 | 225 | 714 |
| 70 to 74 | 0 | 0 | 0 | 5 | 435 |
| 75 to 79 | 0 | 0 | 0 | 0 | 225 |
| 80 to 84 | 0 | 0 | 0 | 0 | 379 |
| 85 plus | 0 | 0 | 0 | 0 | 332 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.13.—AVERAGE MONTHLY INCOME FROM SOURCES OTHER THAN EARNINGS, PERCENTILES BY AGE GROUP: 1984

| Age | 10th percentile | 25th percentile | Median | 75th percentile | 90th percentile |
|---|---|---|---|---|---|
| 0 to 4 | 0 | 0 | $3 | $24 | $103 |
| 5 to 9 | 0 | 0 | 4 | 38 | 115 |
| 10 to 14 | 0 | 0 | 9 | 58 | 160 |
| 15 to 19 | 0 | $1 | 14 | 83 | 223 |
| 20 to 24 | 0 | 0 | 5 | 62 | 206 |
| 25 to 29 | 0 | 0 | 3 | 38 | 175 |
| 30 to 34 | 0 | 0 | 4 | 42 | 163 |
| 35 to 39 | 0 | 0 | 7 | 56 | 171 |
| 40 to 44 | 0 | 1 | 13 | 76 | 243 |
| 45 to 49 | 0 | 1 | 17 | 113 | 299 |
| 50 to 54 | 0 | 3 | 36 | 200 | 481 |
| 55 to 59 | 0 | 9 | 99 | 349 | 683 |
| 60 to 64 | $5 | 88 | 337 | 638 | 1,060 |
| 65 to 69 | 211 | 353 | 562 | 869 | 1,264 |
| 70 to 74 | 242 | 374 | 555 | 795 | 1,197 |
| 75 to 79 | 266 | 380 | 535 | 806 | 1,274 |
| 80 to 84 | 238 | 335 | 483 | 765 | 1,157 |
| 85 plus | 238 | 344 | 479 | 726 | 1,068 |

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.14.—PERCENT OF AGGREGATE INCOME BY SOURCE AND AGE, LOWEST INCOME QUARTILE: 1984

| Age | Earnings | Income from savings and investments | Public and private pension income | Social security | Cash welfare | Other income [1] | Total |
|---|---|---|---|---|---|---|---|
| 0 to 4 | 62.4 | 1.7 | 0.4 | 3.7 | 19.7 | 12.3 | 100.0 |
| 5 to 9 | 68.4 | .1 | .9 | 6.4 | 11.2 | 13.0 | 100.0 |
| 10 to 14 | 71.8 | .7 | .8 | 8.2 | 8.6 | 9.8 | 100.0 |
| 15 to 19 | 70.0 | 1.9 | 1.6 | 12.4 | 7.4 | 6.8 | 100.0 |
| 20 to 24 | 80.3 | 1.6 | 1.3 | 5.3 | 4.4 | 7.1 | 100.0 |
| 25 to 29 | 83.5 | 1.1 | .4 | 3.1 | 5.1 | 6.9 | 100.0 |
| 30 to 34 | 83.0 | 1.6 | .2 | 4.3 | 3.5 | 7.5 | 100.0 |
| 35 to 39 | 83.0 | .6 | .4 | 5.8 | 3.9 | 6.4 | 100.0 |
| 40 to 44 | 79.0 | 2.3 | 1.1 | 6.7 | 4.6 | 6.4 | 100.0 |
| 45 to 49 | 75.1 | 3.4 | 2.4 | 9.4 | 4.1 | 5.6 | 100.0 |
| 50 to 54 | 64.4 | 3.8 | 5.6 | 13.5 | 6.0 | 6.7 | 100.0 |
| 55 to 59 | 48.1 | 6.2 | 11.7 | 19.6 | 6.9 | 7.5 | 100.0 |
| 60 to 64 | 27.0 | 5.1 | 8.2 | 47.0 | 6.0 | 6.7 | 100.0 |
| 65 to 69 | 9.8 | 4.2 | 6.5 | 67.8 | 8.1 | 3.6 | 100.0 |
| 70 to 74 | 5.0 | 3.6 | 3.4 | 76.6 | 8.2 | 3.2 | 100.0 |
| 75 to 79 | 1.9 | 1.0 | 2.3 | 81.9 | 9.5 | 3.3 | 100.0 |
| 80 to 84 | 3.2 | 6.6 | 1.4 | 76.2 | 8.9 | 3.6 | 100.0 |
| 85 plus | .8 | 3.4 | 1.0 | 80.5 | 10.8 | 3.6 | 100.0 |

[1] Other income includes: interfamily transfers, unemployment compensation, veterans payments, disability payments, and miscellaneous income.

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.15.—PERCENT OF AGGREGATE INCOME BY SOURCE AND AGE, LOWEST INCOME QUARTILE: 1984

| Age | Earnings | Income from savings and investments | Public and private pension income | Social security | Cash welfare | Other income [1] | Total |
|---|---|---|---|---|---|---|---|
| 0 to 4 | 93.5 | 3.8 | 0.5 | 0.9 | 0 | 1.3 | 100.0 |
| 5 to 9 | 94.2 | 3.3 | .5 | .4 | 0 | 1.5 | 100.0 |
| 10 to 14 | 92.8 | 3.6 | .7 | .9 | 0 | 2.0 | 100.0 |
| 15 to 19 | 90.0 | 4.4 | 1.8 | .9 | 0 | 2.8 | 100.0 |
| 20 to 24 | 92.7 | 4.2 | 1.0 | .5 | 0 | 1.7 | 100.0 |
| 25 to 29 | 95.5 | 3.1 | .6 | .2 | .0 | .6 | 100.0 |
| 30 to 34 | 95.1 | 3.4 | .4 | .4 | 0 | .7 | 100.0 |
| 35 to 39 | 94.3 | 3.7 | .3 | .4 | 0 | 1.3 | 100.0 |
| 40 to 44 | 93.0 | 4.6 | .8 | .4 | 0 | 1.3 | 100.0 |
| 45 to 49 | 93.0 | 4.4 | 1.1 | .3 | 0 | 1.2 | 100.0 |
| 50 to 54 | 87.6 | 8.0 | 2.7 | .5 | 0.1 | 1.1 | 100.0 |
| 55 to 59 | 82.1 | 11.1 | 5.3 | .6 | .1 | .9 | 100.0 |
| 60 to 64 | 63.4 | 18.4 | 11.8 | 4.8 | 0 | 1.6 | 100.0 |
| 65 to 69 | 32.2 | 26.2 | 19.8 | 20.0 | .1 | 1.8 | 100.0 |
| 70 to 74 | 22.6 | 30.2 | 18.7 | 26.3 | .1 | 2.2 | 100.0 |
| 75 to 79 | 14.2 | 34.4 | 20.8 | 28.9 | .1 | 1.7 | 100.0 |

## SUPPORT TABLE FOR FIGURE 5.15.—PERCENT OF AGGREGATE INCOME BY SOURCE AND AGE, LOWEST INCOME QUARTILE: 1984—Continued

| Age | Earnings | Income from savings and investments | Public and private pension income | Social security | Cash welfare | Other income [1] | Total |
|---|---|---|---|---|---|---|---|
| 80 to 84 | 20.0 | 34.4 | 15.7 | 27.9 | 0 | 2.0 | 100.0 |
| 85 plus | 20.6 | 41.0 | 12.9 | 24.5 | .2 | .8 | 100.0 |

[1] Other income includes: interfamily transfers, unemployment compensation, veterans payments, disability payments, and miscellaneous income.

Source: Survey of Income and Program Participation [SIPP] Wave IV. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.16.—RATIO OF FAMILY INCOME TO THE POVERTY THRESHOLD BY AGE: 1985

| Age | Under 0.50 | 0.50 to 0.74 | 0.75 to 0.99 | 1.00 to 1.24 | 1.25 to 1.49 | 1.50 to 1.99 | 2.00 to 2.99 | 3.00 and over |
|---|---|---|---|---|---|---|---|---|
| 0 to 4 | 0.1 | 7.2 | 5.8 | 5.9 | 6.6 | 11.5 | 22.1 | 30.9 |
| 5 to 9 | 9.1 | 7.0 | 5.5 | 5.3 | 6.9 | 12.0 | 23.3 | 30.8 |
| 10 to 14 | 7.4 | 6.4 | 5.6 | 5.1 | 6.0 | 11.3 | 22.3 | 35.8 |
| 15 to 19 | 7.0 | 5.3 | 4.9 | 4.6 | 5.0 | 9.3 | 20.1 | 43.8 |
| 20 to 24 | 6.6 | 4.6 | 4.9 | 4.9 | 5.7 | 11.0 | 20.2 | 42.2 |
| 25 to 29 | 5.1 | 3.5 | 3.7 | 4.2 | 4.7 | 9.6 | 20.9 | 48.4 |
| 30 to 34 | 3.7 | 3.3 | 3.3 | 3.7 | 5.0 | 10.0 | 21.3 | 49.6 |
| 35 to 39 | 3.8 | 2.8 | 3.2 | 3.4 | 4.0 | 8.2 | 20.6 | 54.1 |
| 40 to 44 | 3.3 | 2.9 | 3.2 | 3.1 | 3.6 | 7.6 | 17.6 | 58.5 |
| 45 to 49 | 3.3 | 2.4 | 2.7 | 2.7 | 3.1 | 6.9 | 16.1 | 62.9 |
| 50 to 54 | 3.6 | 2.3 | 2.7 | 3.0 | 3.4 | 6.4 | 14.2 | 64.4 |
| 55 to 59 | 3.8 | 2.9 | 3.2 | 3.3 | 3.4 | 7.1 | 16.0 | 60.4 |
| 60 to 64 | 3.6 | 3.4 | 4.2 | 4.7 | 4.8 | 9.5 | 17.7 | 52.0 |
| 65 to 69 | 1.9 | 2.4 | 5.0 | 6.3 | 6.6 | 11.3 | 22.0 | 44.5 |
| 70 to 74 | 1.8 | 2.4 | 7.9 | 7.4 | 7.9 | 14.0 | 22.5 | 36.2 |
| 75 to 79 | 1.9 | 3.5 | 9.5 | 9.6 | 8.5 | 15.7 | 20.5 | 30.9 |
| 80 to 84 | 2.1 | 3.7 | 10.4 | 11.2 | 8.9 | 15.2 | 18.9 | 29.4 |
| 85 plus | 2.9 | 5.6 | 10.2 | 12.5 | 8.6 | 12.1 | 18.8 | 29.3 |
| Total | 5.2 | 4.2 | 4.6 | 4.7 | 5.3 | 10.0 | 20.1 | 46.0 |

Source: March 1986 Current Population Survey [CPS]. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.17.—POVERTY RATES BY RACE/ETHNICITY AND AGE: 1985

| Age | White (and other) non-Hispanic | Black non-Hispanic | Hispanic |
|---|---|---|---|
| 0 to 4 | 15.7 | 46.9 | 41.6 |
| 5 to 9 | 13.6 | 47.2 | 41.8 |
| 10 to 14 | 12.8 | 39.6 | 37.7 |
| 15 to 19 | 11.5 | 35.8 | 37.1 |
| 20 to 24 | 12.4 | 30.0 | 26.2 |
| 25 to 29 | 9.2 | 24.0 | 23.2 |
| 30 to 34 | 7.4 | 21.9 | 24.0 |

## SUPPORT TABLE FOR FIGURE 5.17.—POVERTY RATES BY RACE/ETHNICITY AND AGE: 1985—Continued

| Age | White (and other) non-Hispanic | Black non-Hispanic | Hispanic |
|---|---|---|---|
| 35 to 39 | 7.3 | 21.9 | 21.2 |
| 40 to 44 | 7.4 | 19.7 | 20.6 |
| 45 to 49 | 6.4 | 18.4 | 16.4 |
| 50 to 54 | 6.8 | 19.6 | 14.0 |
| 55 to 59 | 7.9 | 24.2 | 15.5 |
| 60 to 64 | 9.0 | 27.7 | 22.8 |
| 65 to 69 | 7.1 | 29.7 | 16.8 |
| 70 to 74 | 10.0 | 27.0 | 28.6 |
| 75 to 79 | 12.4 | 36.0 | 31.0 |
| 80 to 84 | 14.7 | 33.6 | 23.0 |
| 85 plus | 16.0 | 41.6 | 23.8 |

Source: March 1986 Current Population Survey [CPS]. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.18.—TRENDS IN OUTLAYS FOR SELECTED FEDERAL TRANSFERS TO INDIVIDUALS

[In millions of 1986 dollars: 1960 to 1986]

| Fiscal year | Social Security | Unemployment assistance | Cash public assistance | Medicaid, food stamps, housing assist | Medicare |
|---|---|---|---|---|---|
| 1986 | $196,548 | $16,427 | $23,074 | $45,266 | $74,184 |
| 1985 | 191,182 | 16,553 | 21,659 | 44,186 | 71,424 |
| 1984 | 186,848 | 17,921 | 21,070 | 41,738 | 64,688 |
| 1983 | 185,731 | 32,852 | 21,672 | 41,523 | 61,170 |
| 1982 | 177,158 | 25,660 | 21,033 | 39,548 | 56,591 |
| 1981 | 168,939 | 22,541 | 22,003 | 40,327 | 50,562 |
| 1980 | 157,667 | 22,702 | 21,852 | 36,200 | 45,730 |
| 1979 | 152,921 | 14,527 | 21,978 | 32,914 | 41,974 |
| 1978 | 149,679 | 17,460 | 24,144 | 29,919 | 39,303 |
| 1977 | 144,998 | 24,678 | 24,342 | 29,771 | 35,997 |
| 1976 | 135,514 | 34,545 | 24,576 | 29,945 | 31,579 |
| 1975 | 126,676 | 25,475 | 24,276 | 26,329 | 28,144 |
| 1974 | 120,307 | 12,162 | 21,675 | 22,276 | 23,366 |
| 1973 | 114,449 | 11,584 | 20,260 | 19,483 | 21,476 |
| 1972 | 97,583 | 16,483 | 22,534 | 18,511 | 20,734 |
| 1971 | 91,013 | 14,914 | 20,248 | 14,277 | 19,372 |
| 1970 | 80,321 | 8,343 | 17,329 | 9,923 | 18,377 |
| 1969 | 75,634 | 6,500 | 16,333 | 7,868 | 17,840 |
| 1968 | 68,992 | 6,713 | 15,439 | 6,497 | 15,179 |
| 1967 | 65,095 | 6,243 | 14,105 | 4,561 | 9,697 |
| 1966 | 63,779 | 6,490 | 14,692 | 3,305 | 0 |
| 1965 | 55,071 | 8,184 | 14,605 | 1,631 | 0 |
| 1964 | 53,195 | 9,869 | 14,302 | 1,372 | 0 |
| 1963 | 51,484 | 10,707 | 14,223 | 1,164 | 0 |
| 1962 | 47,590 | 11,783 | 13,428 | 939 | 0 |
| 1961 | 41,939 | 15,228 | 12,633 | 611 | 0 |
| 1960 | 39,745 | 9,704 | 11,588 | 488 | 0 |

Source: Adapted from: Library of Congress, Congressional Research Service. "1988 Budget Perspectives: Federal Spending for the Human Resource Programs." By Gene Falk. Report No. 87-129 EPW. Feb. 11, 1987.

## SUPPORT TABLE FOR FIGURE 5.19.—SHARE OF GOVERNMENT CASH AND IN-KIND TRANSFERS GOING TO THE AGED, NONAGED ADULTS, AND CHILDREN: 1985

| | Total (in millions) | Percent of total | | |
|---|---|---|---|---|
| | | Under age 18 | 18 to 64 | 65 and over |
| Population | 236.594 | 26.5 | 62.0 | 11.5 |
| Total cash income | $2,484.213 | 17.6 | 70.4 | 12.0 |
| Total Government cash transfers | $208.753 | 9.0 | 34.7 | 56.3 |
| Cash public assistance [1] | $22.455 | 35.2 | 50.7 | 14.1 |
| Cash social insurance [2] | $186.298 | 5.9 | 32.8 | 52.3 |
| Total in-kind transfers [3] | $100.354 | 15.3 | 32.3 | 52.3 |
| Food stamps | $7.374 | 48.4 | 46.2 | 5.4 |
| Public housing | $6.173 | 26.8 | 40.2 | 33.0 |
| School lunch | $3.368 | 56.6 | 42.5 | 1.0 |
| Medical | $83.439 | 9.9 | 30.1 | 60.0 |

[1] Aid to families with dependent children [AFDC], supplemental security income [SSI], general assistance [GA].

[2] Social Security, unemployment compensation, veteran's payments, worker's compensation.

[3] Government in-kind transfers are valued at their "market values", or estimated cost to the government.

Note.—Figures are estimates. Dollar totals tend to be lower than administrative benchmark figures due to underreporting of income on the CPS. Percentage shares to different age groups are based upon family income amounts being allocated equally among all members of the family. Consequently, a portion of a benefit that, for example, may be targetted toward an aged person, such as Medicare, is shown as also going to other, perhaps younger, family members.

Source: March 1986 Current Population Survey. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.20.—PRE-POST TRANSFER POVERTY RATES BY AGE: 1985

| Age | Earnings only [1] + | Asset income, interfamily transfers + | Pension income + | Social Security [2] + | Cash Welfare [3] official poverty measure + | Noncash benefits [4] | |
|---|---|---|---|---|---|---|---|
| | | | | | | Housing assistance, food stamps, school lunch + | Medicare, Medicaid |
| 0 to 4 | 26.7 | 25.7 | 25.5 | 24.0 | 23.1 | 21.0 | 19.9 |
| 5 to 9 | 26.3 | 24.8 | 24.6 | 22.4 | 21.7 | 19.2 | 18.1 |
| 10 to 14 | 24.7 | 23.2 | 22.7 | 20.4 | 19.5 | 16.8 | 15.9 |
| 15 to 19 | 23.4 | 21.5 | 21.0 | 18.3 | 17.3 | 15.5 | 14.7 |
| 20 to 24 | 21.5 | 19.0 | 18.5 | 16.8 | 16.1 | 15.1 | 14.6 |
| 25 to 29 | 16.2 | 14.6 | 14.3 | 12.8 | 12.2 | 11.1 | 10.6 |
| 30 to 34 | 14.4 | 13.1 | 13.0 | 11.0 | 10.4 | 9.3 | 8.8 |
| 35 to 39 | 13.6 | 12.6 | 12.2 | 10.4 | 9.8 | 8.8 | 8.2 |
| 40 to 44 | 14.5 | 13.2 | 12.5 | 10.2 | 9.5 | 8.5 | 8.3 |
| 45 to 49 | 13.5 | 12.0 | 11.3 | 9.2 | 8.3 | 7.6 | 7.2 |
| 50 to 54 | 16.4 | 14.1 | 12.4 | 9.4 | 8.5 | 8.0 | 7.6 |
| 55 to 59 | 24.1 | 19.7 | 15.2 | 10.5 | 9.8 | 9.3 | 8.9 |
| 60 to 64 | 44.3 | 35.3 | 25.5 | 12.3 | 11.3 | 11.0 | 10.0 |
| 65 to 69 | 71.2 | 53.1 | 39.6 | 10.9 | 9.4 | 8.3 | 6.2 |
| 70 to 74 | 82.9 | 63.1 | 50.5 | 13.7 | 12.1 | 9.8 | 7.0 |
| 75 to 79 | 85.9 | 65.9 | 56.0 | 16.8 | 14.8 | 12.4 | 8.0 |
| 80 to 84 | 86.3 | 65.8 | 58.6 | 18.5 | 16.3 | 14.0 | 9.7 |
| 85 plus | 83.9 | 64.3 | 57.0 | 21.6 | 18.7 | 16.0 | 12.2 |
| Total | 27.8 | 23.7 | 21.3 | 14.9 | 14.0 | 12.6 | 11.6 |

[1] Includes wages, salaries, and farm income.

[2] Includes unemployment compensation, veterans payments, and worker's compensation.

[3] Includes Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), and General Assistance (GA).

[4] Noncash benefits assessed at their poverty budget share values.

Source: March 1986 Current Population Survey [CPS]. Table prepared by the Congressional Research Service [CRS].

## SUPPORT TABLE FOR FIGURE 5.21.—POVERTY RATES FOR THE AGED, CHILDREN, AND NONAGED ADULTS: 1959 TO 1985

| Year | Total population | Persons age 65 and over | Related children less than 18 | Nonaged adults age 18 to 64 [1] |
|---|---|---|---|---|
| 1985 | 14.0 | 12.6 | 20.1 | 11.7 |
| 1984 | 14.4 | 12.4 | 21.0 | 12.0 |
| 1983 | 15.2 | 13.8 | 21.8 | 12.6 |
| 1982 | 15.0 | 14.6 | 21.3 | 12.3 |
| 1981 | 14.0 | 15.3 | 19.5 | 11.3 |
| 1980 | 13.0 | 15.7 | 17.9 | 10.3 |
| 1979 | 11.7 | 15.2 | 16.0 | 9.1 |
| 1978 | 11.4 | 14.0 | 15.7 | 8.9 |
| 1977 | 11.6 | 14.1 | 16.0 | 9.0 |
| 1976 | 11.8 | 15.0 | 15.8 | 9.2 |
| 1975 | 12.3 | 15.3 | 16.8 | 9.4 |
| 1974 | 11.2 | 14.6 | 15.1 | 8.5 |
| 1973 | 11.1 | 16.3 | 14.2 | 8.5 |
| 1972 | 11.9 | 18.6 | 14.9 | 9.0 |
| 1971 | 12.5 | 21.6 | 15.1 | 9.4 |
| 1970 | 12.6 | 24.5 | 14.9 | 9.2 |
| 1969 | 12.1 | 25.3 | 13.8 | 8.8 |
| 1968 | 12.8 | 25.0 | 15.3 | 9.1 |
| 1967 | 14.2 | 29.5 | 16.3 | 10.2 |
| 1966 | 14.7 | 28.5 | 17.4 | 10.6 |
| 1965 | 17.3 | n/a | 20.7 | n/a |
| 1964 | 19.0 | n/a | 22.7 | n/a |
| 1963 | 19.5 | n/a | 22.8 | n/a |
| 1962 | 21.0 | n/a | 24.7 | n/a |
| 1961 | 21.9 | n/a | 25.2 | n/a |
| 1960 | 22.2 | n/a | 26.5 | n/a |
| 1959 | 22.4 | 35.2 | 26.9 | 17.4 |

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[1] Poverty rates for non-aged adults are estimated, using the number poor and the poverty rates for the total population, persons aged 65 and over and unrelated children under the age of 18.

Source: U.S. Bureau of the Census, current population reports, series P-60, No. 127 and 154. "Money Income and Poverty Status of Families and Persons in the United States: 1980 (and 1985)."

# CHAPTER 6. WORK, EARNINGS AND RETIREMENT*

## I. INTRODUCTION

Retirement has become an accepted and expected fact of life for American workers. Retirement is, however, a fairly recent phenomenon. In the early part of this century, workers who depended on earnings from employment to support themselves and their families often expected to continue to work as long as they were able, indeed, for their entire lives. Because there were no generally available retirement income programs as we know them today, it simply was not economically feasible for most people to stop working. Before the 1940s, employer-provided pensions covered only a small segment of the workforce; social security for retired workers did not come into being until 1935, with benefits first payable in 1940. Accrual of personal savings adequate to allow withdrawal from the workforce later in life was beyond the means of most workers.

This is no longer the case. Today, most working Americans expect to retire, and, during the past two decades, they have been leaving the labor force at considerably younger ages than had workers of earlier generations. Although full social security benefits were initially payable at age 65, in 1961 reduced social security benefits were made available for men at age 62, and, by 1985, over half of working men were electing to draw social security before age 65. (As of 1956, women could draw benefits at age 62.) Futhermore, growing numbers of private and public pension programs make it possible to draw retirement benefits before age 62. This trend toward early retirement, particularly among men, who traditionally have been the primary family wage earners, has been one of the most pronounced changes in labor force participation in this century.

Who are these new "young" retirees? How can we explain the steep descent in labor force participation of men age 65 and under that became apparent in the 1970s and continues today? Is this trend of declining labor force participation peculiar to an age cohort or will it continue across generations? As the baby boom generation reaches their early 60s, will their labor force participation rates be as low as the rates that characterized workers in that age group during the last decade? To answer these questions it is instructive to look at the economic and social experiences of different generations.

Workers who reached their early 60s and who withdrew from the labor force at record rates in the 1970s would have been born between 1915 and 1920. In childhood, this age group experienced the economic difficulties of the Depression years, and witnessed their parents' financial struggles, an experience that must have colored their expectations about what life would offer them in the future. However, the Second World War brought jobs and prosperity, and, as young adults entering the labor force in the early 1940s, this age cohort took part in the economic boom that occurred during and after the War. The economic growth of the 1940s, and '50s and '60s afforded members of this generation opportunities and a standard of living that vastly exceeded any expectations they could have had based on their childhood experiences in the Depression years.

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* This chapter was prepared by Carolyn L. Merck, Congressional Research Service.

During the early and middle working years of those who grew up around the time of the Depression, important new public and private programs to provide retirement income were implemented. While these programs were to provide income for older people who, for whatever reasons, could no longer be productive workers, the availability of that income provided incentives for voluntary retirement by making retirement economically feasible. The number of employer-sponsored private pension plans grew from under 700 in 1939 to over 100,000 by 1964 and over 800,000 by 1983. Social security coverage was extended to virtually all employment, and benefits were made available to retirees as early as age 62. During the 1970s. when the wages of many workers were being eroded by high inflation, social security benefits were liberalized and protected from inflation by full and automatic indexing, making social security a substantial, safe and nearly universally available source of retirement income.

Given the economic expericenes of workers who began to retire "early" in the 1970s, when they were in their early 60s or even their late 50s, and given that their economic situation at that age probably greatly exceeded their expectations from early in life, it should not be surprising that they began to leave the labor force earlier than had previous generations: their social security benefits were liberalized and protected from inflation (unlike their wages); they had accrued assets; and, by 1976, more than one in five had a pension. They were the first generation to be able to afford to retire with some degree of financial security.

The trend toward retirement at younger ages causes concern as the retirement of the baby boom generation approaches. Will early retirement continue with the bay boom, thereby exacerbating the problems of a large elderly population with increasing life expectancies? Currently, the trend toward early retirement that became so pronounced in the 1970s has not slowed substantially. However, the economic experiences of the baby boom generation over their lifetime may be entirely different from the experiences of those who retired in the last decade, and may lead to different retirement behavior. Members of the baby boom grew up in relative affluence, but, in young adulthood, they have experienced the high inflation and low wage growth of the 1970s and strong competition for jobs and promotions. Unless the Nation's economy maintains at least moderate, but sustained, growth during the remainder of the working years of the baby boom, they may reach early retirement age, and the age at which their parents retired, in a relatively poorer financial position than they had expected and might consequently remain in the labor force longer. Nevertheless, because an earlier generation had responded to the problem of loss of income in old age by establishing social security and employer-provided pensions, this generation will have access to a basic floor of retirement income that was not there two generations earlier. These relatively new sources of retirement income give current workers more discretion about retirement than was available to earlier generations and make it unlikely that the baby boom will have to return to the patterns of life-long work and delayed retirement that characterized the labor force participation of their grandparents.

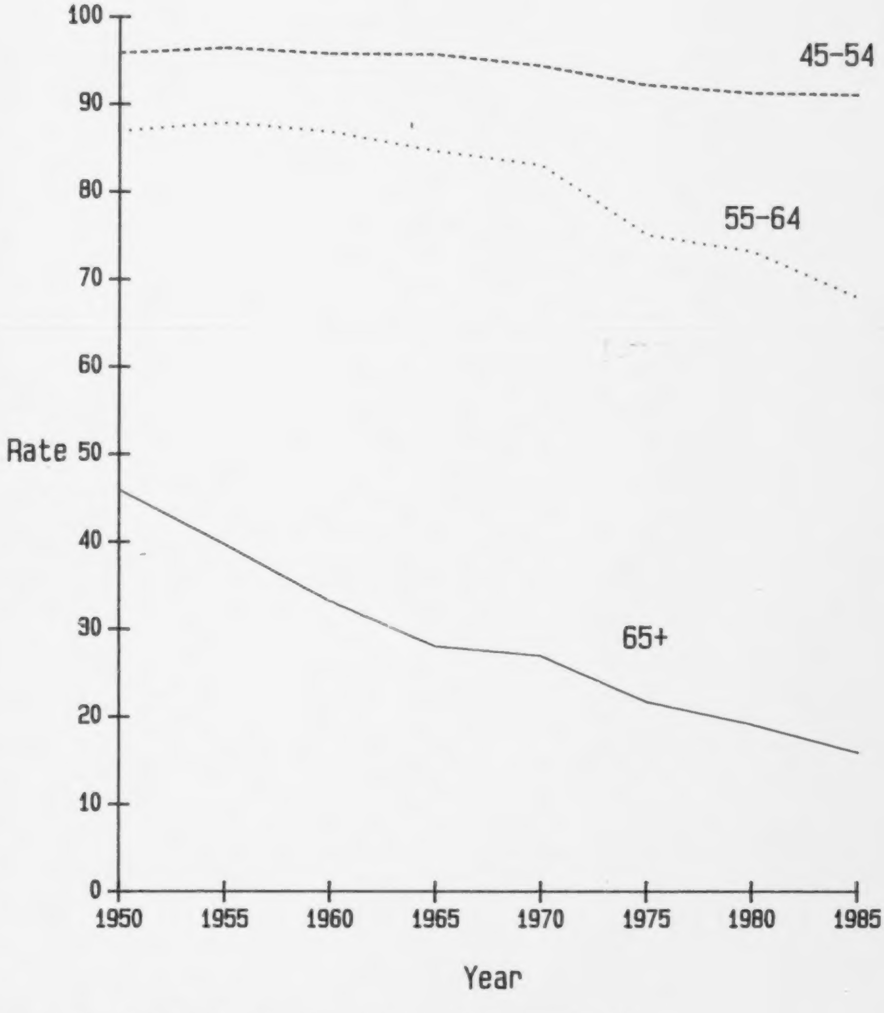
The first section of this chapter documents the recent decline in the labor force participation of men. The next section discusses changes in the amounts and sources of income of the elderly that have enabled many older persons to stop working. The third section examines health, mandatory retirement rules, and discouragement in job seeking as factors that affect the retirement decision. The final section discusses policies that might be adopted to change the retirement behavior of the baby boom generation and some of the implications of those policies.

## II. Labor Force Participation

### A. TRENDS IN LABOR FORCE PARTICIPATION

Over the last 35 years, the labor force participation rates of men and women have been vastly different. Not only did labor force participation among young women rise dramatically, but also women over age 45 joined the workforce at record rates. In contrast, as women were joining the labor force, men were leaving at increasingly young ages. Figures 6.1 and 6.2 show the labor force participation rates of men and women from 1950 through 1985.

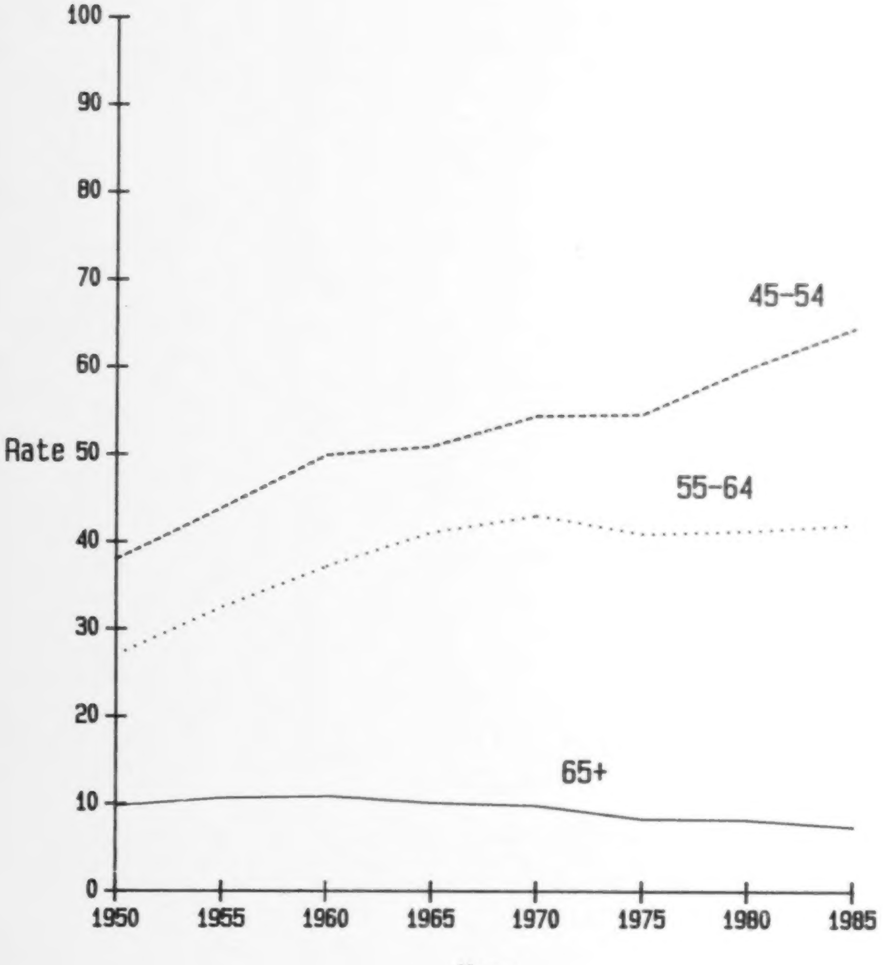
Figure 6.1. Labor Force Participation Rates By Age and Year - Men a/



Source: Handbook of Labor Statistics, June 1985, Table 5. (1985 data, p. 154. Employment & Earnings Jan. 1986).

a/ civilian labor force

Figure 6.2. Labor Force Participation Rates By Age and Year - Women a/



Source: Handbook of Labor Statistics, June 1985, Table 5. (1985, data, p. 154. Employment & Earnings Jan. 1986).

a/ civilian labor force

In 1950, 45.8 percent of American men age 65 and over were in the labor force. By 1985 only 15.8 percent of men this age were working. In addition, in the last 35 years there has been a 22 percent decline in the labor force participation of men between the ages of 55 and 64. In contrast, among women between the ages of 55 and 64, there was a steady increase in labor force participation from 1950 to 1970, although there has been a leveling out since 1970.

### B. PARTIAL VERSUS FULL RETIREMENT

Workers nearing retirement age sometimes indicate that they plan to work or think they would like to do some kind of work after they retire from their main occupation, but the majority of those who consider themselves retired simply do not work. In 1981, Louis Harris and Associates conducted a poll about retirement and work. Of the general population, 76 percent said they would probably like to work for pay after retirement; of those age 65 and over 31 percent said they might like to work, but only 13 percent were working. In a 1974 Harris survey, only 10 percent of nonworking retirees between the ages of 55 and 64 said they had actually looked for a job but hadn't found one.

Parnes and Less,[1] using data from the National Longitudinal Survey of Labor Market Experience (NLS), studied the post-retirement work experience of men who reported themselves as being retired from their "regular" job. Among the men in this 1981 survey who reported that they had retired from their regular job, 22 percent reported that they had worked at some time during the year preceding the interview. However, "second career" full time post-retirement workers were rare: those who worked essentially full time at their post-retirement job constituted only 4 percent of all retirees.

Labor force participation has been used as a proxy for measuring the extent to which people are retired. The measure of labor force participation used by the Bureau of Labor Statistics (BLS) is fairly unambiguous, since people classified as not in the labor force are not working in any job and are not looking for a job. Thus, older people who are working but who might characterize themselves as retired because they are no longer employed on a full-time basis or in their main occupation are counted by the BLS as in the labor force. As a result, by some measures, the BLS data may actually understate retirement rates because workers who are retired from their main job but who are continuing to work part time at something else perhaps, are not reported as "retired."

Research on retirement behavior indicates that retirement is not necessarily an all-or-nothing situation, and that allowing for changing work patterns indicates that, at least for some people, retirement is a process rather than a discrete and completed event.[2] However, post-retirement work is reported by a minority of older men. BLS data on full-time and part-time employment among men indicate that of those older men remaining in the labor force, part-time employment increased somewhat between 1967 and 1985, although there are interesting differences for different age groups. Table 6.1 indicates little change in the incidence of part-time work among 60–61 year-olds between 1967 and 1985. However, among 62–64 year-olds and 65–69 year-olds, there has been an increase in the incidence of part-time work. Although it is difficult to know the real reasons for these differences, it is possible that those who can afford to retire early, retire altogether, and that those who stop working early for health reasons do not attempt to work at all. Nevertheless, even though there has been some increase in the incidence of part-time work by older workers, the overwhelming trend is total withdrawal from the labor force.

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[1] Parnes, Herbert S. and others. Retirement Among American Men. Lexington Press, 1985.

[2] Gustman, Alan L. and Thomas L. Steinmeier. Partial Retirement and the Analysis of Retirement Behavior. Industrial and Labor Relations Review, v. 37, no. 3. Apr. 1984.

TABLE 6.1.—FULL-TIME WORK VERSUS PART-TIME WORK FOR OLDER MEN IN 1967 AND 1985: PERCENT OF WORKERS BY AGE AND WORK SCHEDULE

| | Age of workers— | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 60 to 61 | | 62 to 64 | | 65 to 69 | | 70 plus | |
| | 1967 | 1985 | 1967 | 1985 | 1967 | 1985 | 1967 | 1985 |
| Workers as a percent of all men | 88 | 70 | 81 | 55 | 55 | 36 | 23 | 14 |
| Number of men workers (millions) | 1.4 | 1.5 | 1.7 | 1.6 | 1.6 | 1.5 | 1.1 | 1.0 |
| Total workers (percent) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Part-year [1] | 19 | 19 | 23 | 28 | 41 | 44 | 46 | 47 |
| Full time [2] | 15 | 15 | 17 | 20 | 24 | 19 | 16 | 15 |
| Part time [2] | 4 | 4 | 6 | 8 | 17 | 25 | 30 | 32 |
| Full-year [1] | 81 | 81 | 77 | 72 | 58 | 56 | 55 | 53 |
| Full time [2] | 79 | 77 | 72 | 65 | 47 | 38 | 32 | 25 |
| Part time [2] | 2 | 4 | 5 | 7 | 11 | 17 | 23 | 28 |

[1] Full-year work is 50–52 weeks per year; part-year is less than 50 weeks.

[2] Full-time work is 35 hours per week or more; part-time is a regular work schedule of less than 35 hours per week.

Source: Tabulations from the March 1986, Current Population Survey (unpublished data from the Bureau of Labor Statistics); Demographic and Economic Characteristics of the Aged: 1968 Social Security Survey.

## III. INCOME

What explains the trend of the past 20 years toward withdrawal from the labor force among men in their early and middle 60s? While the retirement decision for any given individual is based on a large number of personal factors such as health and preference for leisure versus work, the economic situation of older workers appears to be the variable that dominates the decision. This section includes historical data on the retirement income available to workers of early retirement, and retirement age, and how the income amounts and sources of income received by the elderly have changed over time, altering the incentives to retire and the feasibility of retirement. It is hard to dispute the apparent casual relationship between the availability of income from sources other than earnings and the decline in work among older men.

## A. INCOME STATUS OF THE ELDERLY

Chapter 5 includes a detailed description of the income sources and amounts of the elderly population in 1984. The data show that, although the elderly have less household income than the non-elderly, they receive more of their income from sources other than earnings, as should be expected. This chapter documents the changing trends in income amounts and sources for the elderly. In view of the decline in labor force participation over the past 30 years or so, one would surmise that a concurrent trend was developing with respect to the availability to older persons of income from sources other than earnings. Table 6.2 shows the changes in the per capita income ratio of families headed by an elderly person (age 65 or over) to families headed by a non-elderly person between 1970 and 1983.

TABLE 6.2—PER CAPITAL INCOME: ELDERLY AND NONELDERLY, 1970–83 INCOME BEFORE TAX

[1983 constant dollars]

| | 1970 | 1983 | Percent change |
|---|---|---|---|
| Elderly (65 and over): | | | |
| Family income | $18,260 | $21,420 | +17 |
| Family income per capita | $7,630 | $9,080 | +19 |
| Unrelated individuals | $7,380 | $10,040 | +36 |
| Non elderly (25 to 64) | | | |
| Family income | $31,050 | $30,940 | −0.4 |
| Family income per capita | $8,110 | $8,960 | +10 |
| Unrelated individuals | $15,820 | $16,900 | +7 |
| Income ratios (elderly to nonelderly): | | | |
| Family income | 0.59 | 0.69 | |
| Family per capita | .94 | 1.01 | |
| Unrelated individuals | .47 | .59 | |

Source: Economic Report of the President, 1985.

The importance of the smaller family size of elderly families becomes apparent when the per capita income of elderly families and non-elderly families is compared. Between 1970 and 1983, the per capita pre-tax income of the elderly improved substantially compared with that of the non-elderly, increasing by nearly 20 percent in this time priod. The income of unmarried elderly individuals increased by 36 percent, giving them somewhat higher per capita income in 1983 than those living in families. While non-elderly families have substantially more income than do elderly families, in 1983 the elderly actually had somewhat more income per capita than did non-elderly families. Even in 1970, when the labor force decline among men in their early 60s began to accelerate noticeably, the per capita income of elderly families was very nearly the same as that of non-elderly families.

The income of those over age 65 increased more in real terms in the 33 years between 1950 and 1983 than has the income of young families headed by someone between the ages of 25 and 34 (table 6.3). In addition, the income of those over age 65 has increased more consistently than has the income of those in their peak earing years, between age 35 and 55. There was a dramatic increase in the income of the non-elderly during the 1950s and 1960s, but an abrupt drop in income growth among the non-ederly in the 1970s. During the 1950s and 1960s the income of the elderly increased as more people received benefits from social security and other pensions. During the '70s, the income of the over-65 group increased more than that of any other age group, reflecting the liberalization of the social security formula that occurred then and the automatic indexing of benefits to the full CPI during years of high inflation. Between 1970 and 1983 the income growth of single individuals over 65 compared with those between 25 and 35 is remarkable, with the younger group of singles and families actually losing ground during those years.

### TABLE 6.3.—MEAN REAL MONEY HOUSEHOLD INCOME 1950–83 (BEFORE TAX INCOME: 1983 DOLLARS)

| Household type/decade | Age of head 25 to 34 | Percent change each decade | Age of head 35 to 44 | Percent change each decade | Age of head 45 to 54 | Percent change each decade | Age of head 55 to 64 | Percent change each decade | Age of head 65 plus | Percent change each decade |
|---|---|---|---|---|---|---|---|---|---|---|
| Families: | | | | | | | | | | |
| 1950 | $14,910 | | $17,510 | | $18,140 | | $16,900 | | $11,780 | |
| 1960 | 20,480 | +37 | 24,130 | +38 | 24,810 | +37 | 22,160 | +31 | 14,740 | +25 |
| 1970 | 26,570 | +30 | 31,850 | +32 | 34,810 | +40 | 30,730 | +39 | 18,260 | +24 |
| 1980 | 25,760 | −3 | 32,420 | +2 | 36,460 | +5 | 32,890 | +7 | 20,370 | +12 |
| 1983 | 24,730 | −4 | 32,460 | | 36,530 | | 32,060 | −3 | 21,420 | +5 |
| Percent change from 1950 | | +66 | | +85 | | +101 | | +90 | | +82 |
| Unrelated individuals: | | | | | | | | | | |
| 1950 | 8,920 | | 9,280 | | 8,270 | | 6,670 | | 4,150 | |
| 1960 | 11,880 | +33 | 13,730 | +48 | 11,230 | +36 | 8,710 | +31 | 5,510 | +53 |
| 1970 | 18,640 | +57 | 17,940 | +41 | 15,740 | +40 | 13,070 | +50 | 7,380 | +34 |
| 1980 | 16,890 | −9 | 19,730 | +10 | 16,530 | +5 | 13,150 | +1 | 8,640 | +17 |
| 1983 | 16,420 | −3 | 20,120 | +10 | 18,200 | +10 | 14,070 | +7 | 10,040 | +16 |
| Percent change from 1950 | | +84 | | +117 | | +120 | | +111 | | +142 |

Source: Economic Report of the President, 1985.

Table 6.3 shows the income of age cohorts over time. For example, people born in 1920 would have been 30 years old in 1950, 40 years old in 1960, etc. As this age cohort moves diagonally down through the decades on the table, their income grows from $14,910 in 1950 to $24,130 in 1960, an increase of 62 percent in constant dollars over those early working years, years during which the post-war economy was expanding. By the time these workers reached age 60 in 1980, their income had increased in real terms by over 100 percent.

In comparison, someone born in 1945, close to the baby boom, would be 25 years old in 1970, when the average income for families in that age cohort was $26,570. Ten years later, in 1980, at the age of 35, these families would have experienced only a 22 percent increase in real income. Although it remains to be seen what the income growth of the baby boom generation will be over their lifetime, they have started out their working years when real income growth has been small or negative, a vastly different situation from that faced by their parents at those ages.

Special tax provisions have helped improve the after-tax income status of the elderly also. Until 1984, all social security income was tax-free; from that year on, social security is partially taxable. Under pre-1987 tax laws, all individuals age 65 and over could claim an extra $1,000 personal exemption, and there was a special 15 percent tax credit for certain low income elderly. Also, because the elderly generally have less income on a tax filing unit basis than non-elderly, they are taxed at lower rates.

### B. CHANGING INCOME SOURCES OF THE ELDERLY

As discussed in the previous sections on changes in labor force participation of the elderly and changes in the amount of income received by the elderly over recent decades, the elderly are working less than had older persons two or three generations ago. In spite of their low rates of labor force participation, their economic circumstances have improved compared with earlier generations and relative to younger, working people. There has also been a telling increase in the portions of the elderly receiving income from assets and pensions rather than from earnings.

Tables 6.4 through 6.6 show the percentage of "aged units" reporting receipt of various types of income in selected years. The data are drawn from tabulations of census data prepared by the Social Security Administration (SSA) according to SSA's definition of an "aged unit." An aged unit is defined as a married couple living together or a nonmarried person. Either one or both of the persons in the unit must meet the age criteria specified in the tables, that is, age 55–61, 62–64 or 65 or over. For married couples, the age is the age of the husband, unless the husband is under 55 and the wife is 55 or over, in which case the age of the wife determines the couple's status. The income of the aged unit is only their own income, and not that of other persons with whom they may live.

The data show a consistent decline over time in the percentage of aged units reporting income from earnings and an increase in the proportion reporting retirement income and income from assets. There has been a substantial increase in the availability of private pension income over past years, with the largest increase occurring between 1976 and 1984 for workers in the 62-64 age group. For those over age 64, the incidence of private pension receipt doubled over the 17 years from 1967 to 1984. Public pension receipt also increased during this time, by about 60 percent. In combination, private or public pensions were received by 36 percent of all units age 62-64 and by 40 percent of those 65 and over in 1984.

### TABLE 6.4.—INCOME SOURCES OF HOUSEHOLDS, AGE 55 TO 61: 1976-84

[Percent reporting receipt of source]

| Income source | 1976 | 1980 | 1984 |
|---|---|---|---|
| Number of units (thousands) | 9,763 | 8,763 | 10,388 |
| Earnings | 83 | 83 | 80 |
| Retirement | 23 | 25 | 26 |
| Social security | 13 | 13 | 12 |
| Public pensions | 6 | 9 | 9 |
| Private pensions | 6 | 8 | 9 |
| Veterans' benefits | 8 | 8 | 5 |
| Unemployment | 8 | 8 | 7 |
| Public assistance | 5 | 4 | 8 |
| Assets | 55 | 72 | 66 |
| Personal contributions | 1 | 2 | 2 |

Source: Income of the population 55 and over. U.S. Department of Health and Human Services, Office of Research and Statistics.

### TABLE 6.5.—INCOME SOURCES OF HOUSEHOLDS, AGE 62 TO 64: 1976-84

[Percent reporting receipt of source]

| Income source | 1976 | 1980 | 1984 |
|---|---|---|---|
| Number of units (thousands) | 3,751 | 3,429 | 4,271 |
| Earnings | 67 | 64 | 59 |
| Retirement | 56 | 62 | 63 |
| Social security | 49 | 54 | 55 |
| Public pensions | 10 | 14 | 14 |
| Private pensions | 13 | 20 | 22 |
| Veterans' benefits | 5 | 8 | 6 |
| Unemployment | 6 | 4 | 4 |
| Public assistance | 7 | 4 | 11 |
| Assets | 58 | 73 | 68 |
| Personal contributions | 1 | 1 | 1 |

Source: Income of the population 55 and over. U.S. Department of Health and Human Services, Office of Research and Statistics.

### TABLE 6.6.—INCOME SOURCES OF HOUSEHOLDS, AGE 65 OR OVER, 1967–84

[Percent reporting receipt of source]

| Income source | 1967 | 1976 | 1980 | 1984 |
|---|---|---|---|---|
| Number of units (thousands) | 15,799 | 17,321 | 17,177 | 20,790 |
| Earnings | 27 | 25 | 23 | 21 |
| Retirement | 89 | 92 | 94 | 94 |
| Social security | 86 | 89 | 91 | 91 |
| Public pensions | 10 | 13 | 15 | 16 |
| Private pensions | 12 | 20 | 23 | 24 |
| Veterans' benefits | 10 | 6 | 5 | 5 |
| Unemployment insurance | 1 | 2 | 1 | 1 |
| Public assistance | 12 | 11 | 8 | 16 |
| Assets | 50 | 56 | 71 | 68 |
| Personal contributions | 3 | 1 | 0 | 1 |

Source: Income of the population 55 and over (1976–84); Demographic and Economic Characteristics of the Aged: 1968 Social Security Survey. U.S. Department of Health and Human Services, Office of Research and Statistics.

There are two other marked changes in the income sources of the aged between 1976 and 1984. First, and most important, asset income became available to a greatly increased number of those age 65 and over; second, the reliance on public assistance income is substantial among the over-65 group, and was 50 percent higher in 1984 than in 1967. Over 1 in 6 persons age 65 or over reported receipt of cash public assistance income in 1984, up from one in eight in 1967, before the Supplemental Security Income [SSI] program was enacted.

Income from assets appears to play a major role in the economic well-being of older persons, and the relationship between earnings and asset income seems to be a key factor in the decline of labor force participation among older persons. The portion of units age 65 and over reporting asset income is large: one-half had asset income in 1967, and this portion increased to two-thirds in 1984. During this time the portion reporting earnings declined by 22 percent.

Not only has the portion of the over-64 age group reporting earnings declined in recent decades, as would be expected with the availability of full social security benefits at that age, but also, in only 8 years between 1976 and 1984, there was a 12 percent decline in the number of 62–64 year olds reporting receipt of earnings (no data are available for this age group in earlier years). Among this somewhat younger group there was a 57 percent increase in the portion reporting receipt of asset income, and a 12 percent increase in those receiving social security (table 6.5). Therefore, their earnings were declining and unearned income sources were becoming widely available. This age group includes married couples with one retired member and, presumably, individuals who might consider themselves partially retired or retired from their main job. They have income from accrued assets, and the data imply that many who have earnings have begun to draw a pension from previous employment.

The importance of earnings as an income source for those age 55–61 did not change much in the 8 years between 1976 and 1984 (table 6.4) (data are not available for earlier years that would indicate any trend toward very early retirement). However, in this comparatively short time span there was an increase of 50 percent in the portion reporting a public or private pension, from 12 to 18 percent. (Military pensions accounted for 25 percent of these pensions in 1976 and 16 percent in 1984).

### C. RELATIVE IMPORTANCE OF SPECIFIED INCOME SOURCES

The decrease in the reliance of the elderly on income from earnings over past years is apparent not only in the decline in the proportion of the elderly who report that they have earnings, but also in the share of the aggregate income of the elderly that earnings represent. This suggests, again, that other income sources have replaced earnings for older persons, there by allowing retirement from work. The proportion of aggregate total income specified sources represented for aged units 65 or over from 1967 to 1984 is shown in table 6.7 and figure 6.3. Of all income received by this age group in 1967, 29 percent was from earnings. By 1984, only 16 pecent was earnings, a decline of nearly half.

## TABLE 6.7.—SHARES OF AGGREGATE INCOME OF AGED UNITS AGE 65 AND OVER

| Income source | All units |  |  | Married couples |  |  | Nonmarried individuals |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  | 1967 | 1976 | 1984 | 1967 | 1976 | 1984 | 1967 | 1976 | 1984 |
| Number of units (thousands) | 12,100 | NA | 20,790 | 4,474 | NA | 8,289 | 7,779 | NA | 12,501 |
| Percent of income | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Earnings | 29 | 23 | 16 | 39 | 29 | 21 | 15 | 13 | 8 |
| Retirement | 46 | 55 | 53 | 42 | 51 | 51 | 51 | 61 | 57 |
| Social Security | 34 | 39 | 38 | 30 | 34 | 34 | 40 | 46 | 44 |
| Public pensions | 7 | 6 | 7 | 6 | 7 | 8 | 8 | 6 | 7 |
| Private pensions | 5 | [1] 8 | [1] 7 | 6 | [1] 9 | [1] 8 | 3 | [1] 7 | [1] 5 |
| Veterans' benefits | 3 | NA | NA | 3 | NA | NA | 4 | NA | NA |
| Public assistance | 4 | 2 | 1 | 2 | 1 | 0 | 7 | 4 | 2 |
| Assets | 15 | 18 | 28 | 13 | 18 | 27 | 18 | 19 | 31 |
| Personal contributions | 1 | 2 | 2 | 0 | NA | NA | 1 | NA | NA |
| Other | 3 | 2 | 2 | 2 | 2 | 1 | 4 | 3 | 2 |

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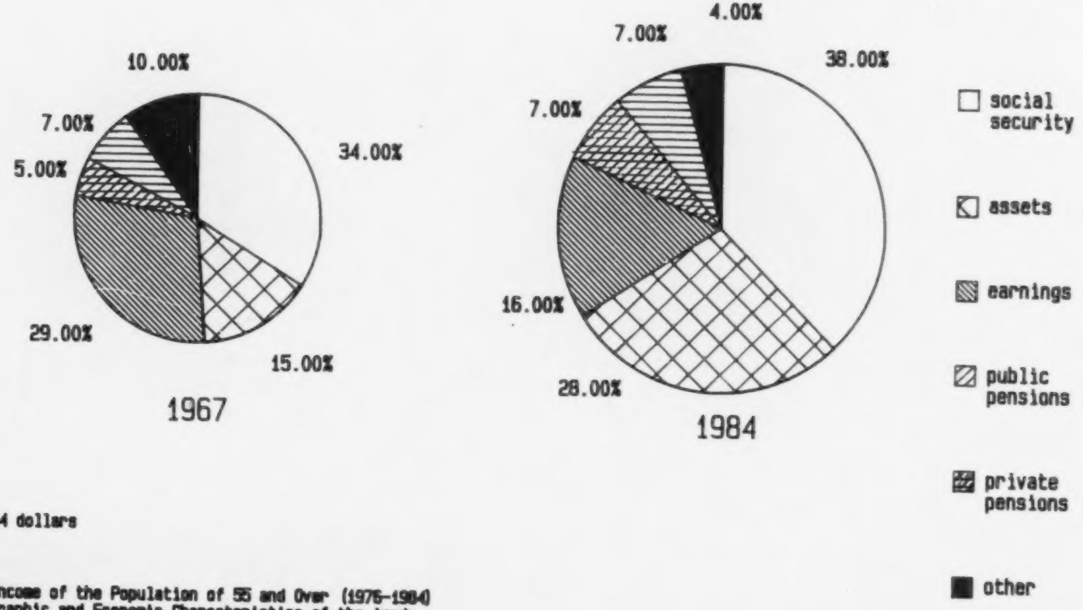
[1] Includes Railroad Retirement.

Source: Income of the population 55 and over (1976–84), and Demographic and Economic Characteristics of the Aged: 1968 Social Security Survey. U.S. Department of Health Human Services.

Figure 6.3.
Income Shares of Aged Households a/

(All units, including married couples and nonmarried individuals)



a/ In 1984 dollars

Source: Income of the Population of 55 and Over (1976-1984) and Demographic and Economic Characteristics of the Aged: 1988 Social Security Survey, U.S. Department of HHS.

In 1984 social security and asset income ranked first and second as shares of all income of the elderly; earnings ranked third. However, there is a substantial difference between earnings as an income share for married couples and for nonmarried individuals: earnings accounted for 21 percent of the total income of married couples including at least one member age 65 and over, but they accounted for only 8 percent of the income of nonmarried individuals, presumably because it is more likely that one member of a married couple will work.

The most striking change that took place between 1967 and 1984 in the aggregate shares of income sources of the elderly was that the relative importance of earnings and assets reversed. Figure 6.3 shows that, as shares of total income, social security and pensions remained approximately the same over this time period. However, asset income doubled and earnings dropped by half. This reversal in assets earnings as income shares occurred at the same time labor force participation among older men was declining at unprecedented rates. Thus, the relationship between earnings and assets appears to have been a pivotal factor in the decision to retire.

Three other points need to be made about figure 6.3. First, total income of aged households was much larger in real terms in 1984 than it was in 1967. Second, the fact that the relative shares of the different income sources stayed about the same, except for earnings and assets, implies that there was substantial growth among all sources of income during these years. Third, private pensions changed little as a share of all income of the elderly during a time when the number receiving a private pension doubled (table 6.6). Thus, even though pension receipt was increasing, the amounts received per recipient were not growing commensurately or the share of the chart representing pensions would have increased. Thus, more people were receiving pensions, but the amounts received were relatively small. For example, in 1984 the median private pension received by aged household units was about $2,900 among single people and $4,500 among married couples. Also, in 1967, 16 percent of all married couples age 65 or over relied on a pension for half or more of their income; in 1984 only 5 percent of aged couples receiving a pension relied on it to supply half or more of their income. For unmarried people, 16 percent reported that their pension was at least half of their income in 1967, but in 1984 only 8 percent did.

Overall, these data demonstrate that the current generation of retirees experienced real growth in earnings during their working years and many of them were able to accrue sizable savings. The rise in interest rates that began in the late 1970s and continued through the early 1980s allowed their savings to compound and grow in their early retirement years when their consumer spending was declining. Therefore they could supplement their employment-related retirement income with substantial personal assets. Whether the baby boom generation will be able to do the same remains to be seen. However, it appears that as long as social security and pensions remain an approximately constant share of retirement income, a pivotal factor in the retirement decision will be income available from assets as a replacement for earnings.

Although declining proportions of older people are in the labor force and are reporting earnings, and although earnings have been declining as a share of the aggregate income of the elderly, earnings may still be an important income source for those who report that they have earnings. In 1967, 50 percent of all married couples age 65 or over reporting earnings indicated that those earnings constituted over half of all their income (table 6.8). Twenty-four percent reported that earnings were 80 percent or more of their income. By 1984, only 38 percent reporting that their earnings constituted over half of their income, and only 15 percent relied on earnings for 80 percent or more of their income.

### TABLE 6.8.—AGED UNITS WITH EARNINGS: PERCENT OF TOTAL INCOME RECEIVED FROM EARNINGS

[Couples reporting earnings as a percent of total income]

| | Unmarried individuals | | Married couples | |
|---|---|---|---|---|
| | 50 percent plus | 80 percent plus | 50 percent plus | 80 percent plus |
| 1967: | | | | |
| 55 to 61 | NA | NA | NA | NA |
| 62 to 64 | NA | NA | NA | NA |
| 65 plus | 46 | 15 | 50 | 24 |
| 1976: | | | | |
| 55 to 61 | 89 | 77 | 93 | 80 |
| 62 to 64 | 75 | 57 | 82 | 62 |
| 65 plus | 30 | 20 | 46 | 19 |
| 1984: | | | | |
| 55 to 61 | 89 | 74 | 91 | 73 |
| 62 to 64 | 76 | 53 | 77 | 53 |
| 65 plus | 33 | 15 | 38 | 15 |

Source: "Income of Population 55 and Over (1976–84), and Demographic and Economic Characteristics of the Aged: 1968 Social Security Survey." U.S. Department of Health and Human Services.

For couples and individuals between 62 and 64 who have earnings, those earnings constitute an important component of income: over half said earnings were 80 percent or more of their income.

As might be expected, earnings are a major income source for those age 55–61. There was a slight decline in the importance of earnings among this age group between 1976 and 1984, but eight out of 10 units reported that they had earnings in 1984, which is largely unchanged from 1976. Just under three-fourths rely on those earnings for over 80 percent of their income.

Overall, those who continue to work are better off then those who do not, a factor likely to be associated with higher-paying jobs, good health and thus better opportunities for continuing employment. Among aged units 65 or over in 1984, earnings accounted for 23 percent of the income of those whose total income was $20,000 or more; earnings accounted for only 4 percent of the incomes of those with $5,000 to $10,000 (table 6.9).

## TABLE 6.9.—SHARES OF AGGREGATE INCOME FROM EARNINGS AND RETIREMENT FOR AGED UNITS 65 AND OVER IN 1984

| | Total income in 1984 | | | | | |
|---|---|---|---|---|---|---|
| | All units | | Married couples | | Unmarried persons | |
| | $5,000 to $10,000 | $20,000 plus | $5,000 to $10,000 | $20,000 plus | $5,000 to $10,000 | $20,000 plus |
| Retirement income [1] (percent) | 81 | 37 | 84 | 39 | 79 | 30 |
| Earnings | 4 | 23 | 4 | 26 | 3 | 12 |
| Other | 15 | 40 | 12 | 35 | 22 | 58 |

[1] Includes social security and public and private pensions and annuities.

Source: Income of the Population 55 and over, 1984. U.S. Department of Health and Human Services, Social Security Administration, SSA Publication no. 13-11871, December 1985. p. 92.

### *D. Income Distribution Among the Elderly*

As might be expected, lower-income elderly households rely heavily on social security and public assistance income and have little in the way of asset income (table 6.10). Social security accounted for 77 percent of the income of those elderly who had incomes below $5,000 in 1984. Although 9 out of 10 elderly households received social security, it accounted for only about one-fifth of the income of the wealthier recipients (those with incomes over $20,000).

## TABLE 6.10.—SHARES OF AGGREGATE INCOME BY SOURCES FOR ELDERLY HOUSEHOLD UNITS, 1984

| Income status | Employment earnings | Social Security | Employer pensions and private annuities | Income from assets | SSI | Other | Total (percent) |
|---|---|---|---|---|---|---|---|
| Under $5,000 | 0 | 77 | 3 | 4 | 14 | 2 | 100 |
| $5,000 to $9,999 | 4 | 71 | 8 | 10 | 3 | 3 | 100 |
| $10,000 to $19,999 | 10 | 48 | 17 | 21 | 0 | 2 | 100 |
| $20,000 and over | 23 | 20 | 15 | 39 | 0 | 1 | 100 |
| Total | 16 | 38 | 14 | 28 | 1 | 2 | 100 |

Source: U.S. Department of Health and Human Services. Social Security Administration. "Income of the Population 55 and Over, 1984." SSA Publication No. 13-11871, December 1985.

The economic situation of the over-65 group as a whole is much improved over what it was in past generations, but large disparities remain among certain subgroups of the elderly. In particular, the incidence of poverty remains high among elderly single women. Nearly 20 percent of all elderly women who live alone have incomes below the poverty threshold (a total of 1.4 million women), about double the poverty rate for all elderly people. And, if not actually below poverty, many single elderly women have near-poverty incomes: a total of 44 percent of all elderly widows have incomes below 150 percent of the poverty level.

The causes for poverty among older women are varied and complex, but a few generalizations can be made. Many have been poor or low income for a large part of their lives. If they spent time in the labor force, it was at low-wage work. The low-income and poor elderly did not, in their younger years, have the kind of work and income history that would permit accumulation of savings, pensions and large social security benefits. A recent study on the causes of poverty among widows found that these women were likely to have had husbands whose health was poor, with the concomitant problems of lower earnings, less savings (or perhaps depleted savings), early labor force withdrawal due to health factors and early death.[3] About half of poor widows had been poor before widowhood, and half were left poor because of their husband's death either through lack of accrual of retirement income or because of medical and death expenses. Recent legislation requiring that the election or rejection of a spouse survivor benefit be a joint husband and wife decision will have little effect on this group of survivors because, for many, no pension rights were accrued and, for others, the pension benefits are not large enough to provide a survivor benefit of any size.

Review of the income sources of the poor and nonpoor elderly who live alone (80 percent of whom are women) indicates how important social security is to these people (table 6.11). Social security represents an estimated 79 percent of the income received by single elderly persons living alone and below poverty; in comparison, it represents an estimated 22 percent of the income of those who might be classified as moderate to high income ($16,224 and over per year). It is estimated that about one-third of this population receives public assistance (principally SSI), and, in combination with social security, these two sources make up 93 percent of the income of the poor, single, elderly population. Thus, in spite of receiving social security and SSI, many elderly remain in poverty. This is true because basic Federal SSI benefits (currently $340 per month for a single individual) are below the poverty threshold, and they are reduced dollar-for-dollar by any social security over $20 the individual receives.

### TABLE 6.11.—RELATIVE CONTRIBUTION OF INCOME SOURCES FOR ELDERLY PERSONS LIVING ALONE, 1987

[Percent of income by source]

| Poverty status | Employment earnings | Social security | Employer pensions | Income from assets | SSI | Other | Total (percent) |
|---|---|---|---|---|---|---|---|
| All elderly | 9 | 40 | 12 | 37 | 1 | 1 | 100 |
| Poor [1] (under $5,408) | 1 | 79 | 3 | 3 | 14 | | 100 |
| Near poor [2] ($5,409–$8,112) | 3 | 81 | 6 | 8 | 2 | | 100 |
| Modest income [3] ($8,113–$16,224) | 7 | 56 | 13 | 21 | | 3 | 100 |

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[3] Hurd, Michael, and David Wise. The Wealth and Poverty of Widows: Assets Before and After the Husband's Death. Draft report to the Commonwealth Fund Commission on Elderly People Living Alone.

TABLE 6.11.—RELATIVE CONTRIBUTION OF INCOME SOURCES FOR ELDERLY PERSONS LIVING ALONE, 1987—Continued

[Percent of income by source]

| Poverty status | Employment earnings | Social security | Employer pensions | Income from assets | SSI | Other | Total (percent) |
|---|---|---|---|---|---|---|---|
| Moderate-to-high income [4] (over $16,224) | 12 | 22 | 13 | 52 | ............. | 1 | 100 |

[1] Estimated poverty threshold for single elderly persons in 1987.
[2] 100 percent to 150 percent of poverty.
[3] 150 percent to 300 percent of poverty.
[4] Over 300 percent of poverty.

Source: Estimates prepared for the Commonwealth Fund Commissions on Elderly People Living Alone (1987) by ICF, Inc. Estimates are based on Current Population Survey (CPS) data adjusted for survey underreporting.

Under projections of social security benefits published by the Social Security Trustees based on their intermediate assumptions, and projections of income from all sources prepared by ICF, Inc., also using the social security intermediate assumptions, future generations of elderly persons could be better off in real terms than today's retirees.[4] Nevertheless, poverty among elderly people living alone and among women in particular is potentially a problem that will persist into the first decades of the next century; it would persist if (1) women continue to work less steadily and at lower-wage jobs than men and thus qualify for lower social security and pension benefits, and (2) if working women continue to be employed in industries with low pension benefit coverage rates. Thus, even though various projections of economic and wage growth indicate that the situation of the elderly in the future generally could be good, and that the poverty rate among the elderly as a group would consequently fall, the situation for elderly single women might not improve accordingly because, in spite of increasing labor force participation among women, their work might not provide significant increases in their retirement income.

## IV. Health and Other Factors

### A. HEALTH

A factor often cited as an important reason for retirement is poor health. Although disability, partial impairment or generally failing health are the reasons some workers retire from the labor force, it cannot be assumed that the early retirement trend of recent years has been caused by an increasing rate of failing health among American workers. It is difficult to measure accurately the extent to which poor health is the real or central determinant of the retirement decision, and debate on this topic has, in the past, been stymied by data reliability. Survey data gathered during personal interviews asking retirees to report retrospectively why they retired seem to be biased by respondents' ex post justification of the retirement decision. Retirement due to failing health may seem to be more socially acceptable than a desire for more leisure. Also, the post-retirement health status of the respondent, which may be deteriorating with increasing age, may color the retiree's perception of why he retired in the first place.[5]

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[4] The Common Wealth Fund Commission on Elderly People Living Alone published a report, Old, Alone, and Poor, in April 1987. In the preparation of this report, the Commission contracted with ICF, Inc., a research-consulting firm, for estimates and projections pertaining to income sources and amounts for the elderly population. ICF data are included as an appendix to the Commission report. When used in this paper, these estimates and projections will be referred to as prepared by ICF, Inc.

The National Longitudinal Survey (NLS) attempted to deal with this problem by monitoring the health status of the sample respondents before and after retirement.[6] A cohort of men who were between the ages of 45 and 59 in 1966 were followed for 15 years. At the end of the survey in 1981, these men were between 60 and 74. Thus, the respondent population was followed during the years in which retirement occurs.

The NLS survey data indicate that health is an important factor in the retirement decision. Of all the men who retired during the survey, 35 percent cited health reasons. Poor health was more frequently the reason for retirement among black men than among whites (47 percent versus 34 percent, respectively). Also, among those who retired "early" (under age 62), poor health was much more likely to be the reason for retirement than for those who retired at 65 or over: among white men retiring before age 62, 46 percent retired for health reasons; 23 percent of those retiring at 65 or over did so because of poor health. These figures are 59 percent and 44 percent, respectively, for black men.

Identifying poor health as the primary cause of retirement is imprecise at best. Nevertheless, the data from the NLS, which was designed to establish the health status of retiring workers more accurately than retrospective surveys in which retirees are asked their reason for retirement, indicate that failing health is an important determinant of the retirement decision, particularly among younger retirees. The incidence of social security disability awards is additional evidence that health is a non-trivial factor in retirement. In 1985, 45 percent of all new social security disability awards were made to workers who became disabled between the ages of 55 and 65.

This evidence that failing health is a major factor in retirement is interesting in the context of recent early retirement trends and prompts questions about the relative importance of the availability of retirement income and poor health in the retirement decision. However, because there is no reason to believe that the health of working men has been deteriorating at an increasing rate over the past thirty years or so, one must conclude that it is the availability of retirement income that is allowing the rate of early retirements to increase among workers in good health who have a preference for leisure. Nevertheless, the availability of retirement income allows workers with minor impairments to elect retirement rather than continuing to work in spite of poor health.

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[5] Brazzoli, Gloria J. The Early Retirement Decision: New Empirical Evidence on the Influence of Health. The Journal of Human Resources, v. 20, no. 2., spring, 1985, pp. 214–234.

[6] The designation of health as the reason for retirement relied on responses to questions asked before retirement and in contexts other than an explanation of the retirement decision. Health retirees (a) reported poor health as a reason for leaving their pre-retirement job, (b) reported poor health as a reason for absence from the labor force in the 12-month period prior to the report of retirement, (c) revised their expected age of retirement downward for health reasons in the interview preceding retirement, (d) specified poor health as the reason for not seeking work either in the year of retirement or the preceding year, (e) reported inability to work in the interview in which retirement was first reported or in the preceding interview, or (f) reported a work-limiting health problem in each of the two interviews preceding the interview in which retirement was reported. Thus, although this research includes self-reported data, it does not rely totally on post-retirement reports and gets a picture of the respondents' health status before retirement.

### B. OTHER FACTORS IN THE RETIREMENT DECISION

Two other factors often cited as causes of retirement are mandatory retirement rules and worker discouragement in job seeking. As of January, 1987, legislation removed mandatory retirement rules in most industries. Overall, even in jobs in which mandatory retirement rules apply, (or applied under old law) an extremely small portion of workers seem to have been forced into retirement because of those rules. The NLS attempted to measure the proportion of men affected by mandatory retirement. The data include as mandatorily retired only those men who were covered by a mandatory retirement rule, who actually retired at the mandatory age and who reported in the survey preceding retirement that they would prefer to keep working. Workers covered under a mandatory retirement plan who retired before the mandatory age were not counted as affected by mandatory retirement. By this criteria, only 3 percent of the surveyed retirees retired mandatorily. However, this does not mean that there are not subtle means used by employers to discourage older workers from continuing on the job nor does it mean that discrimination against older workers has been eliminated. Nevertheless, it does indicate that mandatory retirement did not force out of the labor market very many people who would otherwise have continued to work.

The NLS also investigated the extent to which people retire because of problems in finding work. In surveys relying solely on information reported retrospectively by the retiree such workers are difficult to identify precisely because of post-retirement rationalization of the retirement decision. The NLS classified retirees as discouraged workers only if they did not meet the criteria for a health-related or mandatory retirement and if their preretirement record included an involuntary separation from employment and an unemployment spell. Some consideration was also given to the retiree's post-retirement report of the reason for retirement.

By these criteria, about 5 percent of workers retiring between 1966 and 1981 were discouraged by lack of job opportunities. The protion varied from about 3 percent in the period 1966 to 1970 to 7 percent in 1976 to 1981.

Again, although discouragement in job seeking is difficult to precisely identify as the major cause for retirement, it seems to apply to far fewer retirees than does health or purely voluntary withdrawal from the labor market as factors leading to retirement.

## V. CONCLUSIONS AND POLICY IMPLICATIONS

There is persuasive evidence that the decline in labor force participation among older workers that has occurred in the last 35 years is largely attributable to the availability of income from sources other than earnings. Further, even though the elderly are no longer depending heavily on earnings as a means of support, the adequacy of the income of older persons has improved in spite of the fact that work has declined. The basic cause for the improvement in the economic status of the elderly is the availability of social security benefits, which were liberalized and indexed in the 1970s, and the accrual of personal assets. Employer-provided pensions, not widely available to earlier generations, are also received by many retirees today. Overall, the increase in retirement income programs and the favorable economic conditions that prevailed throughout the working years of today's retirees made it unnecessary for a generation of workers to continue to work into later life.

Much of the cause for the overall improvement in the economic situation of the elderly has been brought about because of public policies and Federal laws, particularly the provision of social security, tax-favored pension plans, tax incentives to encourage retirement savings, and special tax advantages for the elderly. However, as the portion of the population that is elderly grows these programs will become increasingly expensive and could become a burden that society is unable or unwilling to bear. In that case, should the government intervene to keep older workers in the labor force, and, thus, reduce their demand for retirement income?

In recent years several such measures have been legislated. The 1983 social security amendments gradually raise the age for full benefits from 65 to 67. Persons become eligible for social security (reaching age 62) between the year 2005 and 2016 will not become eligible for unreduced benefits until age 66. Workers becoming eligible in 2022 and thereafter will receive full benefits at age 67. The 1983 amendments also improved the actuarial fairness of the social security system so that workers who delay receipt of social security until after the age for full benefits will receive an increase in their benefits. When the normal retirement age reaches 67, social security benefits for a person waiting until age 70 to draw benefits will increase to 124 percent of the benefits payable at 67. The law also liberalized the earnings test, beginning in 1990. In addition, the 1986 Budget Reconciliation Act amended ERISA, the tax code and the Age Discrimination in Employment Act to prohibit any private pension plan from ceasing accruals or suspending plan contributions to an employee who works beyond normal retirement age. The Age Discrimination in Employment Amendments of 1986 prohibited use of a mandatory retirement age in most retirement plans, thereby removing virtually all official vestiges of mandatory retirement. (There are some exceptions for occupations in which the public safety is at risk.)

The major policy tools that remain for inducing workers to remain in the labor force as they grow older are raising the age for reduced social security benefits and further liberalization of the social security earnings test. The 1983 amendments raised the age for full benefits and reduced the percentage of the full benefit level that will be payable at 62. However, the question is whether the reduction in early retirement benefits is actually a deterrent to early retirement. In general, there is evidence that older workers tend to discount heavily promises of future benefits and, as long as workers are aware that their lifetime benefits are approximately actuarially equivalent at age 62 to what they will be if drawn later, they may choose to purchase additional leisure with the reduction in their current income. In 1985, 46 percent of all workers awarded social security retirement benefits were age 62; about two-thirds were under age 65.

The fact that failing health is such a significant determination of retirement raises questions about public policies that have been or might be proposed to delay payment of retirement income with the intent of inducing workers to remain in the labor force. During debate about the 1983 social security amendment to raise the retirement age for full benefits from 65 to 67, there was considerable discussion about the possible hardship this might cause for workers in poor health. Although the increase in the social security retirement age was justified by many on the basis of the increasing longevity of the American population, the high incidence of health-related retirements suggests that the benefits of increased life expectancy or of continued good health in old age are not shared by all. Thus, one reason that age 62 for eligiblity for reduced benefits was retained was to provide income protection to workers in failing health for whom continued employment would be difficult at best.

Further liberalization of the social security earnings test might keep some workers in the labor force longer, and thus they would be tax-payers for a longer time. However, to some extent, the problem of the cost of retirement would be exacerbated as some workers who would have kept working anyway would continue to work and draw benefits.

Other interventions might be aimed at discouraging early retirement under private pension plans, such as imposing a penalty tax on pensions drawn before a specified age. The new tax law, for example, imposes a 10 percent penalty tax on lump sums withdrawn from pensions or IRAs before age 59½. However, pension plans are important to employers as workforce management tools, and early retirement is important in industries that need the abilities of a younger workforce rather than an experienced, older workforce.

The important question about the continued labor force participation of the baby boom generation as they reach their 60s is whether their retirement will cause economic and social problems that will make it necessary for further steps to be taken to keep them on the job. The answer to this question lies primarily in the Nation's future economic growth. It is apparent that the retirement decision is highly conditioned by the availability of unearned income, and that asset income is particularly important. Thus, the retirement decisions that will be made by the baby boom will depend to a large extent on their individual retirement savings, which, in turn, are dependent on their wage growth. The size of their social security benefits will also reflect the wage growth that takes place during their working years. At the same time, the condition of the economy and the extent to which there has been real growth by the first decades of the next century essentially will determine the capacity of society to pay the costs associated with a large number of retirees. Thus, from the standpoint of both the individual faced with the retirement choice and of taxpayers who must pay certain bills associated with a large population of older persons, sustained economic and real wage growth will be required during the remaining working years of the baby boom if retirement at fairly early ages is to be feasible for this generation.

An additional economic factor that may come into play is the possibility that a labor shortage may arise when the "baby bust" generation cannot meet the demand for labor when their parents retire. Should this occur (or, according to some, when this occurs), older workers would be induced to remain on the job as employers raise wages and curtail the availability of early retirement in their pension plans.

Thus, the future of work and retirement for the baby boom generation will be determined in large part by the future of the economy. At this time, projections of economic growth made by the Social Security Trustees show that under the intermediate assumptions real wage growth will be about 1.5 percent between now and 2020. This growth rate is high enough to compensate for the periods of low wage growth the baby boom has experienced thus far in their careers and should allow them to choose to retire in their early 60s (or perhaps earlier). Further, these projections indicate that growth in the economy in general will be such that there will be adequate resources to support workers and retirees. However, if the economy performs more poorly than the intermediate assumptions indicate, early retirement for members of the baby boom may not materialize. If the Nation experiences slow economic growth, the baby boom may not approach their retirement years with a distribution of income sources and amounts like those available to today's retirees, and the trends toward early retirement may slow or reverse.

## APPENDIX: BACKUP TABLES TO GO WITH FIGURES 6.1 AND 6.2

### PERCENT OF MEN IN THE LABOR FORCE

| Year | Age— | | |
|---|---|---|---|
| | 45 to 54 | 55 to 64 | 65 plus |
| 1950 | 95.8 | 86.9 | 45.8 |
| 1955 | 96.4 | 87.9 | 39.6 |
| 1960 | 95.7 | 86.8 | 33.1 |
| 1965 | 95.6 | 84.6 | 27.9 |
| 1970 | 94.3 | 83.0 | 26.8 |
| 1975 | 92.1 | 75.0 | 21.6 |
| 1980 | 91.2 | 73.1 | 19.0 |
| 1985 | 91.0 | 67.9 | 15.8 |

Source: Handbook of Labor Statistics, June 1985; Employment and Earnings, January 1986.

### PERCENT OF WOMEN IN THE LABOR FORCE

| Year | Age— | | |
|---|---|---|---|
| | 45 to 54 | 55 to 64 | 65 plus |
| 1950 | 37.9 | 27.0 | 9.7 |
| 1955 | 43.8 | 32.5 | 10.6 |
| 1960 | 49.0 | 37.2 | 10.8 |
| 1965 | 50.9 | 41.1 | 10.0 |
| 1970 | 54.4 | 43.0 | 9.7 |
| 1975 | 54.6 | 40.9 | 8.2 |
| 1980 | 59.9 | 41.3 | 8.1 |
| 1985 | 64.4 | 42.0 | 7.3 |

Source: Handbook of Labor Statistics, June 1985; Employment and Earnings, January 1986.

# CHAPTER 7. INDIVIDUAL RETIREMENT SAVING AND DISSAVING*

## I. INTRODUCTION

Previous chapters have discussed the prospective retirement of the baby boom generation starting around 2010. Given demographic and economic trends, it has been argued by some analysts that our society should prepare for this retirement boom. Increased individual saving is one way our society can prepare. The Federal Government might want to encourage individual retirement saving for two reasons: (1) it might stimulate economic growth; (2) it might provide a source of assets that retirees could dissave later in life if they need additional income. This chapter analyzes ways in which the Federal Government can use incentives to encourage saving for retirement, but it concludes that the effects of such policies are uncertain.

The theory about the effects of tax incentives upon personal saving is ambiguous. A tax incentive for saving or dissaving can lower an individual's expected lifetime taxes. This raises the after-tax rate-of-return or "yield" on his assets, which could induce him to save either more or less. Moreover, empirical evidence does not show that tax incentives definitely increase personal saving.

This chapter analyzes incentives for retirement saving and dissaving. It has four parts: (1) a definition of a tax incentive for saving and a discussion of its possible effects; (2) an analysis of individual retirement savings arrangements; (3) an analysis of dissaving arrangements; and (4) a conclusion.

## II. INDIVIDUAL TAX INCENTIVES FOR PRERETIREMENT SAVING AND POSTRETIREMENT DISSAVING

### A. DEFINITION OF A TAX INCENTIVE FOR SAVING OR DISSAVING

An incentive promises a reward for a particular kind of behavior. In the case of tax incentives for saving or dissaving, the reward is lower lifetime taxes for additional saving or dissaving. For example, a tax-deductible Individual Retirement Arrangement (IRA) permits a taxpayer to defer taxes on his deposit and earnings until he withdraws his funds. When he pays ordinary income tax on his withdrawals after age 59½, the present value of his taxes will be lower than if he had paid current taxes on his IRA deposit and earnings. Similarly, he must begin dissaving after age 70½ based on time schedules related to life expectancy, or he will face a penalty of additional income taxes.

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* This chapter was prepared by Richard A. Hobbie, House Committee on Ways and Means staff (previously with the Congressional Research Service).

A tax incentive for saving is often measured by the increased after-tax rate of return or "yield" on an asset. For example, suppose under the Tax Reform Act of 1986 (P.L. 99-514) that a taxpayer expects to be in the 28 percent tax bracket throughout his remaining life. Assume he can deposit $2,000 in a tax-deductible IRA or $1,440 ($2,000-.28($2,000)=$1,440) after taxes in a taxable savings account. In the case of the tax-deductible IRA, $1,440 is his "own money" and the remainder of $560 represents a deferred tax liability. The total $2,000 IRA contribution would compound on a tax-deferred basis until he withdraws his funds. If he withdraws his funds after age 59½, the withdrawl would be taxed as ordinary income. The $1,440 in a taxable savings account would compound, but the taxpayer would pay taxes on the earnings each year. He would pay no additional taxes on his withdrawals from the taxable account. If the taxpayer could earn 6 percent per annum in either account for 30 years, his after-tax yield on his own $1,440 would be 6 percent in a tax-deductible IRA compared to 4.32 percent in the taxable savings account. Thus, the total after-tax return in the IRA at $8,271 would be 62 percent higher than the $5,121 in a taxable savings account.

Assuming other relevant factors are equal, it might seem clear that a higher after-tax return would increase individual savings. If one could earn a higher after-tax return for a certain type of saving, one might shift not only other savings into that arrangement, but he might save more, too. However, theory and evidence on the possible responses to such an incentive are ambiguous.

### B. POTENTIAL EFFECTS ON PERSONAL SAVING OF AN INCREASE IN THE AFTER-TAX YIELD

Consider an individual allocating his income between current and future consumption. The "price" the individual pays for current consumption is the after-tax yield he could have obtained if he had traded some of his current consumption for future consumption, or in other words, if he had saved. If current consumption becomes relatively more expensive as a result of the Government's introduction of a tax-favored individual retirement arrangement, two effects would occur—a substitution effect and an income effect:

(1) *Substitution Effect.*—Holding lifetime income constant, a higher after-tax yield on retirement saving makes current consumption relatively more expensive than future consumption (saving). In response, the taxpayer would choose to consume less currently and to save more. In other words, he would "substitute" saving for current consumption.

(2) *Income Effect.*—A higher after-tax yield on retirement saving would increase the taxpayer's lifetime income. A higher lifetime income would allow an increase in current and future consumption. However, because current income would not change while current consumption would increase, saving would decrease.

Since the income and substitution effects work in opposite directions on savings, the effect of an increase in after-tax yield, and hence the effect of a tax incentive for saving, is theoretically ambiguous. Many empirical studies have addressed this question, but no definite answer has been obtained.[1]

### C. POTENTIAL EFFECT ON NATIONAL SAVING OF AN INCREASE IN AFTER-TAX YIELD

Given the large projected Federal budget deficits, additional tax deferrals for retirement saving in the near future would add to the deficit unless increases in other taxes or cuts in expenditures offset the lost revenue. Since national saving can be defined as the sum of personal saving, business saving, and Government saving, an increase in the Federal budget deficit resulting from a tax incentive could offset any increase in individual saving.

It is difficult to determine the net effect of a tax incentive on national saving because fiscal decisions often are not clearly linked. Nevertheless, one must account for the possible effects of changes in Government borrowing, taxing, and spending in assessing the effect of a tax incentive for saving. Ignoring such fiscal changes risks overstating the effects of a tax incentive on national saving, which in turn risks overstating effects on investment, capital formation, and economic growth.

Consider an example in which a tax incentive for retirement saving has increased personal saving by $25 billion per year at the cost of $20 billion in lost Federal personal income taxes. The Federal Government could finance this cost in some combination of three ways:

(1) borrow up to $20 billion;
(2) increase taxes by up to $20 billion; or
(3) cut expenditures by up to $20 billion.

If the Federal Government borrowed $20 billion, it would be dissaving by that amount. Since national saving is the sum of personal saving, business saving, and Government saving, the $20 billion in additional Government dissaving would offset the $25 billion in increased individual saving, leaving a net increase in national saving of only $5 billion.

If the Federal Government increased taxes by $20 billion, this could avoid an increase in Government dissaving. The net increase in national saving could be as much as the increased individual saving of $25 billion, particularly if the $20 billion were collected through a tax that reduced consumption only. However, if some of the taxes came from income that would have been saved, the net increase in national saving would be less than $25 billion. Furthermore, the additional taxes might have work disincentive effects, particularly if they reduced after-tax wages.

A $20 billion cut in expenditures would have an effect similar to an increase in taxes. If the $20 billion cut came out of consumption, such as from a cut in income transfers that would have been spent otherwise, national saving would increase by $25 billion. However, to the extent that Government expenditures involved saving (e.g., partially deferred consumption in the form of durable public goods such as bridges and highways or nuclear submarines), the decline in expenditures on this form of Government saving would offset the effects of the increase in individual saving.[2]

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[1] See for example, U.S. Library of Congress. Congressional Research Service. Individual Retirement Accounts and Financial Savings: New Evidence. Report No. 86-125 E, by William Jackson. Washington, 1986. p. 19-22.

### D. WAYS TO INCREASE THE POSITIVE EFFECT ON SAVINGS OF TAX INCENTIVES FOR SAVING

If additional steps are taken to increase tax incentives for individual saving, changes in fiscal policy could offset them. However, Congress could increase national saving directly by reducing the Federal Government's dissaving, or in other words, by cutting the size of the Federal deficit. Beyond general fiscal policy, tax incentives for individual saving could be improved if they would reward only saving that occurred as a result of the tax incentive. However, many tax incentives tend to reward saving that would have occurred anyway.

Galper and Steurle have outlined three criteria that tax incentives for saving should meet if they are to increase individual saving:[3]

(1) The tax incentive should not be available to taxpayers who merely shift other assets to the tax-favored saving arrangement. Asset shifting would allow them to lower their lifetime taxes without increasing saving.

(2) The tax incentive should work "at the margin." In other words, the incentive should apply to additional saving above what was planned before the incentive became available. Otherwise, taxpayers can lower their lifetime taxes on savings without increasing their savings at all.

(3) "Tax arbitrage" should be limited. Tax arbitrage occurs when the taxpayer is able to borrow funds, deduct the interest on the loan, and save the principal in a tax-favored asset. In this process, it is possible for some taxpayers to "save" in a tax-favored retirement arrangement without reducing current consumption. Consequently, a large portion of the contribution to the tax-favored retirement arrangement could actually stem from borrowing, or, in other words, dissaving.

Given the fungible nature of assets and income, these criteria are difficult if not impossible to satisfy. In the case of asset shifting, voluntary individual contributions to individual retirement savings arrangements are usually limited to some proportion of compensation. For example, individual before-tax contributions to cash or deferred arrangements, or so-called 401(k) plans, are limited to $7,000 annually. Under this limit, it is possible still for a high-paid individual to contribute up to $7,000, to draw down other assets by the same amount, and to consume at a level as high or higher than he would have without the 401(k) plan. As a consequence, his lifetime taxes would decline without increasing saving.

When a tax incentive for individual saving works "at the margin," it rewards new saving, not saving that would have occurred anyway. The "margin" is the line separating saving that would have occurred anyway from additional saving induced by the tax incentive. Galper and Steurle gave the example of an exclusion from taxable income of the first $500 of interest and dividend income. This exclusion would reduce taxes for taxpayers who would have earned at least $500 in interest and dividends anyway without providing them any incentive to save more. Since these taxpayers receive nearly all of the income and dividends that would be excluded from taxes, most of the tax incentive would be a windfall gain to these taxpayers.[4]

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[2] Currently, such Government expenditures are not, however, counted as saving or investment in the national income accounts. Although they might well yield future returns, they are treated instead as current consumption.

[3] Galper, Harvey and Eugene Steurle. Tax Incentives for Savings. Brookings Review, v. 7, no. 2, winter 1983. p. 16-23.

Tax arbitrage has been limited by the Tax Reform Act of 1986 in two ways:

(1) Deductions for interest on certain consumer installment loans will be phased out by 1991. Interest deductions are disallowed also on home mortages in excess of the purchase price of the home plus the cost of improvements. Interest deductions on home equity loans for qualified educational and medical purposes are allowed up to the fair market value of the residence.[5]

(2) Marginal tax rates will be lower for most taxpayers, which will drop the value of deductions, exclusions, and exemptions still available under the new law. This will increase the effective interest rate on mortage loans and other qualified home equity loans for which interest is still deductible.

The phaseout of deductions for interest on certain consumer loans will increase the after-tax cost of borrowing, or in other words the cost of dissaving. This in itself is an incentive for saving, because it raises the price of current consumption relative to future consumption, which might encourage more saving if the substitution effect exceeds the income effect. It also limits the taxpayer's ability to finance a contribution to a tax-favored retirement arrangement out of dissaving instead of from saving. However, homeowners still will have substantial room to borrow against the equity in their homes, to deduct the interest on their home equity loans, and to use the funds from the loans to finance deposits in IRAs or other tax-deferred savings arrangements.

## III. CHOICE OF INDIVIDUAL RETIREMENT SAVINGS ARRANGEMENTS

### A. EMPLOYER-SPONSORED SALARY REDUCTION PLANS

In employer-sponsored salary reduction plans the employer gives the employee a choice of receiving a given percent of his compensation in cash or deferring the compensation and the income taxes on the deferral and on the associated earnings in a salary reduction plan.[6] If the individual defers some of his compensation, his contribution and earnings are sheltered from taxes until the individual receives a distribution of funds from the plan, presumably during retirement.

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[4] Ibid.

[5] U.S. Library of Congress. Congressional Research Service. Interest Deductibility After the Tax Reform Act of 1986. The Home Equity Loan Interest Deduction Limits Apply to Loans Made After August 16, 1987. Report No. 86-556 E, by Nono A. Noto. Washington, 1986.

[6] Employer-sponsored salary reduction plans are a type of "defined contribution plan." That is, the plan specifies the formula for contributions. The overall limit on annual contributions is the lesser of 25 percent of compensation or $30,000.

There are five types of salary reduction plans: (1) Cash or deferred arrangements under 401(k) of the Internal Revenue Code (IRC); (2) the Federal Thrift Savings Plan under the Federal Employees Retirement Systems Act of 1986 (P.L. 99-335); (3) tax-sheltered annuities under section 403(b) of IRC; (4) salary reduction arrangements under section 457 of IRC; and (5) Simplified Employee Pensions (SEPs) under section 408(k) of IRC.

Cash or deferred arrangements (CODAs) or 401(k) plans are probably the best known of the salary reduction arrangements. They are generally available for private profit-making employers. The Tax Reform Act of 1986 prohibited State and local governments and nonprofit organizations from establishing new 401(k) plans, but "grandfathered" existing plans in these sectors. Ironically, at about the same time, Congress authorized a 401(k)-type plan for Federal employees which is called the Federal Thrift Savings Plan.

In 401(k) plans private employers typically contribute 50 cents for each dollar the employee saves up to 6 percent of compensation. Beyond 6 percent of pay employees usually can add unmatched contributions, often as high as a total of 16 percent of compensation.[7] The Tax Reform Act of 1986 limited the voluntary employee contributions to 401(k) plans, or so-called "elective deferrals," to $7,000 annually, a figure that is indexed for inflation beginning in 1988.

According to the 1983 Current Population Survey (CPS), about 3 million workers then participated in 401(k) plans, of whom 0.8 million were in State and local government jobs.[8] A later survey of medium and large firms found that about 5.3 million workers in these firms had access to 401(k) plans in 1985.[9]

Tax-sheltered annuities under section 403(b) are available to certain tax-exempt nonprofit organizations and educational institutions. Under the Tax Reform Act of 1986 employees can elect to defer as much as $9,500 annually in a 403(b) annuity. This limit will be indexed for inflation when the indexed $7,000 limit on annual elective deferrals to 401(k) plans reaches $9,500. The Teachers Insurance Annuity Association (TIAA), the largest non-Federal pension program, provides 403(b) annuities for workers and retirees from over 3,600 colleges, universities, and nonprofit educational organizations.[10] Other nonprofit organizations, such as the Young Men's Christian Association (YMCA) or various churches, also have 403(b) annuity plans.

Salary reduction arrangements under section 457 of IRC are for State and local Government employers and certain tax-exempt nonprofit organizations. However, if an employee can contribute to a 403(b) annuity and a section 457 plan, his total employee elective contributions are limited to $7,500 annually.

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[7] Hewitt Associates. Survey of Plan Design and Experience in 401(k) Salary Reduction Plans. 1985 ed. p. 22-23.

[8] Rockwell, Lynn A. Trends in Non-Traditional Pension Plan Coverage. The Handbook of Pension Statistics 1985, Commerce Clearing House, Inc. p. 412.

[9] U.S. Department of Labor. Employee Benefits in Medium and Large Firms. Bulletin 2262. Washington, 1985. p. 76.

[10] Statement of James G. MacDonald, Chairman and Chief Executive Officer. Teachers Insurance and Annuity Association—College Retirement Equities Fund, before the Senate Finance Committee Hearings on H.R. 3838, Feb. 4, 1986.

SEPs allow employers to contribute to employee IRAs up to the lesser of 25 percent of compensation or $30,000 annually. The Tax Reform Act of 1986 amended SEPs effective in 1987 to allow employers of no more than 25 employees at the beginning of the tax year to operate SEPs on a salary reduction basis. These employers can offer employees cash compensation or a deferral in a SEP. Employees elective deferrals are limited to the same indexed cap that applies to elective deferrals in 401(k) plans, namely $7,000 annually.

The Tax Reform Act of 1986 established certain uniform rules for tax-qualified pension plans and certain other retirement saving arrangements. In particular, the law made it more difficult to withdraw funds from salary reduction arrangements.

There were five major changes:[11]

(1) The distribution rules establish a uniform distribution beginning date for all qualified plans, IRAs, tax-sheltered annuities, and custodial accounts: no later than April 1 of the year following the year in which the participant attains age 70½ without regard to the date of retirement or separation of service. This is a requirement that an individual must dissave during retirement. If pension plans to not comply, individual participants are to be subject to a 50 percent nondeductible tax on the amount by which an individual's required distribution exceeds the actual distribution. This is effective as of January 1, 1988.

(2) Withdrawals before age 59½ are allowed only in the case of separation of service, death, disability, or for certain hardships. Hardships withdrawals can come only from employee elective deferrals. These provisions are generally effective beginning in 1989.

(3) The additional income tax on early withdrawals of 10 percent is a disincentive to consume the funds before age 59½. The goal of this provision is to discourage not only pre-retirement consumption, but also to recoup some of the lost Federal income tax on before-tax contributions that was provided as an incentive to save for retirement consumption, not to save for pre-retirement consumption. This tax is effective in 1987.

(4) The taxation of distributions was changed in part to discourage consumption of the full amount of pension funds, or so-called "lump-sum" distributions, upon withdrawal. Under prior law, 10-year forward income averaging was available on the lump sum, and favorable capital gains treatment was available on the portion of the lump-sum attributable to pre-1974 contributions. The Tax Reform Act of 1986 repealed the favorable capital gains treatment and replaced 10-year forward income averaging with one-time 5-year income averaging. Ten-year forward income averaging was originally provided to help mitigate the higher taxes imposed on the lump sum by a progressive tax structure, but the need for such treatment was reduced by a less progressive structure under the new law and

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[11] U.S. Congress. House. Conference Report. Tax Reform Act of 1986. p. II-449 to II-465.

the general ability to roll over such lump-sums into an IRA. This is effectively in 1987.

(5) The treatment of loans was tightened so that individuals cannot maintain continously a loan outstanding from a qualified plan. Also, the deductibility of interest on such loans was made subject to the general restrictions under the new law, which would deny deductibility for interest on certain consumer installment loans. This is generally effective beginning in 1987.

### B. INDIVIDUAL RETIREMENT ARRANGEMENTS

Single taxpayers may contribute up to the lesser of $2,000 or 100 percent of their compensation annually to an Individual Retirement Arrangement (IRA). Married taxpayers filing jointly can contribute an additional $250 under the so-called "spousal IRA," but no individual may contribute more than the $2,000 to his account.

Before the enactment of the Tax Reform Act of 1986, all taxpayers could deduct their IRA contributions and defer income taxes until they withdraw their funds. The Tax Reform Act of 1986 limited deductibility of IRA contributions beginning in the 1987 tax year to persons not participating in employer-sponsored pension plans and to participants in employer-sponsored pension plans with adjusted gross incomes below certain limits. For single taxpayers participating in employer-sponsored pension plans, the IRA contributions will be fully deductible if they have no more than $25,000 in adjusted gross income. Above $25,000, the deduction is phased out at the rate of $200 for each $1,000 over $25,000. The law will allow no deduction for single taxpayers with adjusted gross incomes above $35,000. A similar rule applies to married taxpayers filing jointly who are participating in employer-sponsored pension plans. They will be able to take the full deduction if they have no more than $40,000 in adjusted gross income. The deduction is phased out similarly over the next $10,000, leaving no IRA deduction if their adjusted gross income is above $50,000.

Non-deductible IRA contributions will have a lower yield. For example, suppose two taxpayers are in the 28 percent bracket, but taxpayer A can deduct his IRA contribution and taxpayer B cannot. If both taxpayers have $1,440 to contribute, taxpayer A can deposit not only his own $1,440, but also the tax deferral of $560 (.28×$2,000=$560). Taxpayer B can deposit his $1,440 only. Assuming they can earn 6 percent on their deposits for 30 years, the after-tax yield to taxpayer A on his own $1,440 will be 6 percent, but for taxpayer B it will be only 5.08 percent.

The decline in after-tax yield of IRAs for persons who participate in employer-sponsored pension plans and who have adjusted gross incomes above the thresholds could cause them to save more or less. Savings might not change at all if these individuals merely shift their IRA savings to, say, municipal bonds. These individuals already are receiving tax deferrals under qualified pension plans, a growing number of which are salary reduction type plans. Moreover, any loss in individual saving must be weighed against the potential increase in Government savings resulting from the cut in their tax deferrals, or in other words, the increase in their income taxes. Unfortunately, the net effect on overall national savings is uncertain.

### C. HOMEOWNERSHIP

Home purchases represent another tax-favored means for accumulating wealth in retirement. Most home buyers borrow to purchase their homes, but their repayments of the mortgage principal represent savings. Home purchases are tax-favored in several ways:

(1) Homeowners avoid paying rent, which, in a sense, yields income to them. This "imputed" rental income is not taxed by the Federal Government.

(2) Homeowners do not pay taxes on capital gains until they are realized.

(3) If homeowners sell their home after they are 55 years old, under certain minimal conditions, the first $125,000 of capital gains is not taxed.

Mortgage interest deductions provide an incentive for saving through buying housing. This will increase the amount of housing purchased by diverting other saving to home purchases, and it might raise national saving too. Of course, some of the saving to purchase homes would have occurred anyway. Therefore, tax incentives given to this saving might not raise national saving at all. Moreover, to the extent that homeowners do not pay off their mortgages, say by taking out second mortgages or refinancing, they are getting tax advantages without increasing saving. This is perhaps the most common form of tax arbitrage.

### D. OTHER RETIREMENT SAVING INSTRUMENTS

Retirement saving outside participation in a qualified pension plan or an IRA is often less attractive. Such instruments include savings accounts, deferred annuities, bonds, common stocks and mutual funds. Although the investments can be as safe and perhaps more liquid than qualified pension plans or IRAs, the deposits or purchase price and the earnings are often taxed currently. Therefore, the yield can be lower than that in a residence, qualified pension plan, or tax-deductible IRA. Also, estate planning can play a key role, particularly if one wants to bequeath some wealth to his heirs or transfer wealth to his relatives while still alive. In either case, such intra-family transfers can yield an implicit stream of income from family members to an elderly person that might escape the elderly person's income taxes completely.

Savings accounts or money market accounts are among the safest and most liquid instruments. However, because taxes on deposits and earnings are not deferred, their after-tax yields are relatively low. Consequently, they do not yield returns as high as retirement savings in qualified pension plans or tax-deductible IRAs.

Deferred annuities are more attractive retirement savings vehicles than savings accounts because of their higher after-tax yields. Although their purchase price or "premium" is not subject to current taxes, the earnings accumulate on a tax-deferred basis. This raises their after-tax yield, but they are less liquid than savings accounts. Deferred annuities can be fixed annuities or variable annuities. Fixed annuities are invested in fixed income securities, such as Government bonds, while variable annuities are invested in variable return instruments, such as common stocks. The expected yield on variable annuities tends to be higher than fixed annuities, but they are more uncertain, making them riskier investments.

Debt instruments, such as corporate bonds, municipal bonds, or U.S. Treasury securities, are bought with already taxed funds. Municipal bonds are tax exempt, which makes them more attractive to taxpayers in the higher tax brackets, but their before-tax yields are lower than those from taxable assets. Bonds can provide a relatively high before-tax yield because they don't mature for relatively long periods of time, but their yield is taxed currently.[12] Moreover, they are not necessarily safe. The default risk is significant on corporate and municipal bonds, but negligible on Federal Government bonds. Although one can buy and sell bonds, which makes them relatively liquid, there is also market-price risk. If interest rates increase, bond prices decline. This depresses the relative yield on bonds whether one sells them at lower prices or holds them to maturity at their original, but relatively low, coupon (interest) rates.

Common stocks seem attractive because although they are bought with already-taxed funds, one can reap relatively high returns in the form of capital gains that are not taxed until stock is sold. However, they are risky, and the Tax Reform Act of 1986 will treat capital gains from common stocks and other investments less favorably than prior law. Previously, an individual could deduct 60 percent of a net capital gain and be subject to at most a 50 percent tax on the remainder, leaving a maximum tax rate on the full amount of only 20 percent ($.5\times(1.0-.6)=.2$). The Tax Reform Act of 1986 repealed the capital gains deduction and treats capital gains as ordinary income, effective in 1988. This raised the highest statutory tax rate on capital gains by 40 percent to 28 percent, which lowered the yield. While this provision treated capital gains equally with other types of income, it is a disincentive to save compared to prior law.

Finally, there are several tax provisions that promote intergenerational transfers that are incentives for the elderly to save until they die. Three important ones are:

(1) the exemption from estate taxes of the first $600,000 of an estate;

(2) the exemption from estate taxes of bequests to surviving spouses; and

(3) the adjustment of the "basis" of an inherited asset to its value at the time of inheritance. The "basis" is the cost of the asset against which capital gains or losses are calculated.

If an elderly person can trade the promise of bequest for implicit income or services from relatives in the form of food, clothing, housing, care, etc., this might provide a higher implicit yield than a more explicit "arms length" transaction, such as the purchase of an annuity, with persons or institutions outside the immediate family.

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[12] Series EE U.S. Savings bonds provide the investor with the option to pay taxes on the accrued interest each year or to pay taxes on the full amount at redemption.

The next section discusses incentives for dissaving during retirement, ways to encourage elderly persons who have accumulated assets during their work lives to convert them to income and consumption rather than to save them for their heirs.

## IV. CHOICE OF DISSAVING ARRANGEMENTS

The life cycle hypothesis of saving assumes that individuals try to consume at a constant rate over their lifetimes. While working, they save enough to retire at about the same standard of living they enjoyed previously. Although this hypothesis is useful, it oversimplifies in at least two ways: (1) it says nothing about the desire to bequeath some assets to heirs; (2) it assumes that retirees dissave when many continue to save well into retirement.

Some analysts have argued that retirees could supplement their retirement incomes if they were willing to convert some of their assets to income. A side benefit of such an approach, it has been argued, would be a decline in the upward pressure on public retiree benefits. As noted in Chapter 5, most retirees have few financial assets available to convert to income. However, many have substantial home equity. This section analyzes various ways retirees could dissave by converting their assets to income, and in turn using the income to purchase additional current consumption. How additional dissaving by retirees would affect the savings behavior of subsequent generations and what effect this would have on the long-run national savings rate is uncertain.

### A. FACTORS TO CONSIDER

At first glance, the problem of converting assets held at retirement into a stream of income over one's remaining life seems straightforward. One can sell the asset and use the proceeds to purchase a life annuity from an insurance company. Given this simple understanding, it is surprising that private markets have failed to develop widely enough to facilitate the conversion of home equity to income. This subsection discusses some of the reasons for this apparent market failure. The ensuing subsections discuss available arrangements for dissaving, with particular attention to the incentives or disincentives for converting to income the main assets available to most elderly persons—their homes.

A transaction converting an asset to future income has at least two sides: the seller of the asset and the purchaser of the asset. In both cases, the parties to the transaction must concern themselves with several risks that could erode the future value of the transaction. The main risks are from changes in the general price level, changes in mortality, and changes in property values. An asset conversion will be a viable transaction if the parties can find a way to share these risks so that both parties expect to benefit enough from the transaction to make it economically attractive.

In considering an asset conversion to income, an elderly person would first look at his current income to decide if he wanted to dissave in order to supplement his current income. The main source of income for most elderly persons is social security. Many also receive income from private pensions, and they may have other sources such as work, or interest and dividends from savings.

About 3 out of 5 persons age 65 and over own their homes outright.[13] It is often said that they own their homes "rent-free." Another way to look at this, however, is that they receive a stream of "imputed income" from their homes. Unlike many other forms of income, this imputed income is tax-free. This makes imputed income more attractive than an equal amount of taxable income.

Suppose an elderly person decides to convert his home to a straight life annuity, which yields constant periodic payments for his remaining life. Already, he has overcome the formidable fear of losing his home in a complex deal. However, he will be concerned about other risks also:

(1) Inflation could erode the value of his annuity, but an insurance company could provide a partially indexed or "graded" annuity to protect against some of this risk.

(2) Premature death could wipe out some of what he gave up to purchase the annuity, but an insurance company could provide a mixed straight life annuity and a "term-certain" annuity in which a certain number of years of payments would be guaranteed to his survising spouse or estate.

(3) Alternatively, the annuitant could live longer than expected, wiping out the profits of the insurance company. The property value could decline if he continues to live in the house, and he could dissave by forgoing maintenance and repairs. A financial intermediary could deal with this property risk by purchasing only part of the value of the house so that the owner would have some incentive to maintain his remaining equity.

(4) The elderly person risks eligibility for income-tested benefit programs, such as Supplemental Security Income (SSI), food stamps, and medicaid, which would count the additional annuity income against eligibility limits, but not the value of his home or its imputed income.

Beyond the economic risks involved in the transaction, there are less tangible barriers that may be important too. Elderly persons might avoid taking risks and might fear complex transactions with financial intermediaries such as banks, savings and loan associations, and insurance companies. Moreover, elderly persons might want to bequeath some of their assets, but they might fear that a long-term illness would wipe out this possibility. Alternatively, they might transfer their liquid assets to a family member and hope to gain SSI, food stamp, and medicaid eligibility. Whatever the choices, dissaving in retirement can be frightening for many if for no other reason than the fear of outliving one's assets and dying in poverty.

The next subsections discuss some of the available arrangements for dissaving during retirement.

### B. LIVE OFF THE CAPITAL AND EARNINGS OR BUY AN ANNUITY

There is a saying in the insurance industry that "Annuities are bought and life insurance is sold." This suggests that even when a salesman explains the advantages of annuities, it is still hard to sell them unless the potential buyer has already decided to buy. One reason this might hold true is that the monthly annuity looks so small in relation to its premium and other income one could earn with the premium. For example, if an individual has a life expectancy of 20 years and he purchases an immediate annuity with $50,000 at an annnuity rate of 4 percent, his annual before-tax annuity would be $3,680 or $309 per month. This seems relatively small to potential buyers in relation to retaining the $50,000 and earning, say, 6 percent per year for an annual before-tax yield of $3,000 or $250 per month.

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[13] U.S. Library of Congress. Congressional Research Service. Converting Home Equity Into Income for the Elderly: Issues and Options. Report No. 84-42 E, by B. Ellington Foote. Washington, 1984. p. 1.

The difference between living off one's capital and earnings or purchasing an annuity not only depends on the annuity rate and potential yield of an alternative investment, but it depends also on how much risk an individual is willing to take. One can take the risk that inflation would lower the purchasing power of his capital or buy a graded annuity that would be partially indexed for inflation. One can take the risk of outliving his assets, or he can purchase an annuity to insure against this risk. However, as one obtains more insurance against these risks, the monthly payment drops on a given premium paid for an annuity. Consequently, if one finds the monthly payments from a straight life annuity relatively unattractive, additional insurance against other risks such as premature death or inflation only will reinforce this perception.

### C. HOME EQUITY CONVERSION

If elderly homeowners need or want additional income, they could look to their homes as a source. One should remember, however, that they reap imputed income from the home already. It equals the rent they would have to pay otherwise to live in equivalent housing. Moreover, this imputed rental income is not taxed, and it keeps up with inflation in the rental price of equivalent housing.

Despite imputed rental income, elderly homeowners might find it increasingly difficult to pay rising property taxes, and maintenance and repair bills. At this point, they might consider selling the house. In this regard, the $125,000 exemption from capital gains tax on the sale of a principal residence for persons 55 years old and older is a substantial dissaving incentive. Unfortunately, annuities available to individuals do not seem attractive relative to the costs of renting other acceptable housing. Moreover, the rent could increase with inflation, while even a graded annuity probably would not keep up fully with inflation.

In recent years a response to this problem has emerged called "home equity conversion." This concept is not new for younger persons who expect to repay home equity loans out of future earnings. Second trusts and home equity lines of credit are common today. However, it is new to elderly persons who expect little or no future earned income and who must repay their home equity loans out of their assets, namely their homes. Although home equity conversions for elderly persons have not been extensive, they hold the promise of private supplemental income for elderly persons that might enable them to remain in their homes until they die.

There are several general types of home equity conversions for the elderly:

(1) "Repayable loans" or "reverse mortgages" accumulate principal and interest to a specified amount over a particular time and then are repaid at maturity.

(2) "Nonrepayable loans," such as "reverse annuity mortgages," are not repaid during the borrower's remaining life, but a lien against the property allows the lender to collect the repayment after the death of the borrower.

(3) Split equities involve the purchase of the "residual equity" in the house coupled with guaranteed lifetime occupancy for the seller. The "residual equity" gives the buyer the right to sell the property after the death of the occupant.

(4) Sale-leaseback agreements involve the sale of the house to an investor with an agreement to lifetime occupancy for the seller.

(5) Tax deferral plans allow the homeowner to defer property or other taxes in exchange for a growing lien on the property. The Government collects the future value of the taxes when the property is sold.

### *1. Reverse Mortgages*

"Reverse mortgages" are "repayable loans" to the homeowner that are secured by the home. They are reverse mortgages in the sense that the homeowner receives a payment from the lender instead of making a payment to the lender. For example, suppose a lender offers a $50,000 loan to the homeowner at 10 percent interest compounded monthly for 30 years. The homeowner would receive a monthly payment of $22.[14] The value of the loan after 30 years would be $50,000, $7,920 in principal (360 payments at $22 each) and $42,080 in interest. When the loan matures, the homeowners could repay it by using his equity in the house.

Reverse mortgages have the advantage of being nontaxable because they are loans. If the individual does not outlive the terms of the loan so that it is repaid after death, the tax treatment of the interest on the loan would be irrelevant to the deceased. However, under the Tax Reform Act of 1986 the payment of interest on a home mortgage is tax-deductible up to the amount of the original purchase price plus the cost of improvements. Amounts above these limits might be deductible too, if they were used for certain medical expenses. This might reduce or eliminate any Federal income taxes on the borrower's income in his last year of life, which could increase the after-tax value of the estate.

### *2. Reverse Annuity Mortgages*

Private reverse annuity mortgages have not been used in the market to date, but they are conceptually possible. Instead of receiving a monthly loan payment, the borrower would instead take out a loan and purchase an annuity with it. For example, a bank might lend $50,000 in principal to a person and stimultaneously purchase an annuity from an insurance company.[15] The gross straight-life annuity for a male at age 65 would be $609 per month. At a 10 percent per year interest rate on his expected remaining life (140 months based on 1983 data), the interest would be $417 per month, leaving a net annuity of $190 per month. When the borrower dies, the lender would collect the $50,000 in principal from the sale of the house.[16]

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[14] Ibid., p. 4.

The advantage to the homeowner of the reverse annuity mortgage is that the lender and the insurance company share in the mortality risk of the homeowner outliving his assets. The main disadvantage to the homeowner is that he takes the risk of dying early and losing part of his expected annuity premium. A mixed straight-life and term-certain annuity would mitigate this problem, but it would lower monthly payments.

Another barrier against reverse annuity mortgages might be institutional. Banks, savings and loans, and other potential lenders are not accustomed to dealing with mortality risk. As a result, a reverse mortgage with a certain term is easier for them to provide. Even though they could arrange the purchase of the annuity with a life insurance company, they must deal still with mortality risk in determining the expected remaining life of the borrower, which determines the term of the loan, which in turn determines the monthly interest charges to be deducted from the gross annuity. With rising expected life spans in recent years, this is a formidable barrier for these institutions.

### *3. Split Equities*

Split equities are similar to reverse annuity mortgages except that instead of acquiring a lien against the property in exchange for a loan, the investor purchases an interest in the house. One disadvantage to the seller is that the income derived from an annuity that he might buy from the proceeds of the partial sale of his home would be taxable. Also, because the investor owns part of the home and the occupant retains the right of lifetime occupancy, the contract spelling out the rights and responsibilities can be complex. For example, the investor takes on property risk in acquiring an interest in the house. If the occupant dissaves by allowing the house to depreciate, the investor would lose. Investors would want written protections against this risk.

Split equities can be private or public. Private split equities could be attractive to an investor if various homeowning expenses could be converted into deductible business expenses. However, the Internal Revenue Service (IRS) has not yet ruled on the legitimacy of such arrangements. Public split equities set up by a Government agency might avoid some of the problems with private transactions, such as "fine print fraud or abuse," but they might entail subsidies, also. Once subsidies are involved, a form of non-price rationing or "targeting" of benefits might be necessary to allocate limited funds to low-income populations.[17]

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[15] Note that this transaction is not financially equivalent to the transaction discussed above in the reverse mortgage example. In the reverse mortgage the loan principal was $7,970 in contrast to $50,000 for the reverse annuity mortgage.

[16] Ibid., p. 8.

### *4. Sale-Leaseback Agreements*

Private sale-leaseback agreements are similar to private split equities, except that the entire house is sold to an investor who agrees to rent back to the seller for his remaining life. The contracts can be as complex as split equities, and any annuity income derived from the sale would be taxable. IRS does not allow the capital gains exclusion of $125,000 if rent is not charged, which restricts this type of transaction, particularly for agreements between family members. Also, IRS might not allow the exclusion if the rent does not reflect current market conditions.[18]

### *5. Tax Deferral Plans*

Tax deferral plans might be the least risky conversion strategy for a homeowner. For example, the homeowner could defer local property taxes and accumulate a lien against his property until he dies. Then, the Government could collect the deferred property taxes plus interest. The Government would face some property risk in the process, but it could lessen this risk by limiting the tax deferral plus interest to some percent of the current market value of the property. However, when the limit is reached, the Government would need to negotiate a new limit or to foreclose on the property.

An advantage to the tax deferral approach is that it could involve a well-known public agency. This could lessen the homeowner's fear of "fine print fraud or abuse." Another advantage is that it involves no loans or annuity payments, but rather it is a cut in out-of-pocket expenses. A disadvantage is that it might not involve very much money, particularly if the home is not worth very much. This could make tax-deferral plans regressive because the benefit could increase with the value of the property. Also, it could involve Government agencies set up to help the elderly in property foreclosures and evictions.

## V. CONCLUSION

In general, the effect on national saving of tax incentives for individual saving is uncertain. The theory about the effects on individual saving of tax incentives is ambiguous and the evidence is debatable. Moreover, the tax losses ensuing from tax incentives for saving could increase Government dissaving, thereby offsetting potential increases in individual saving. A more direct way for Congress to increase saving is by reducing the Federal budget deficit. The way this is done, however, can have important effects on work incentives and other economic factors.

The Tax Reform Act of 1986 includes provisions aimed at discouraging preretirement consumption of savings in retirement arrangements, but their effect on retirement saving in general is uncertain. For example, the various provisions applied to tax-qualified pension plans that discourage early withdrawals might help. However, decreased personal income tax rates have lowered the value of tax deferrals in individual retirement savings arrangements, which could discourage some retirement saving. Increased effective tax rates on capital gains could hurt retirement saving, too, but they are somewhat offset by lower corporate income tax rates. The repeal of deductions for certain consumer installment loans might discourage dissaving, but homeowners will be able to borrow against the equity in their homes to purchase consumer items under certain conditions. This has led to rapid growth in the home equity loan market, which could stimulate dissaving of home equities before retirement. This could reduce one relatively untapped source of additional retirement income for the elderly.

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[17] Guttentag, Jack M., Home Equity Conversion: A New Factor in Retirement Planning. Saving For Retirement. Phillip Cagan, ed. Report on A Mini-Conference on Savings Held for the 1981 White House Conference on Aging. Sponsored by the American Council of Life Insurance and Columbia University Graduate School of Business. p. 110.

[18] U.S. Library of Congress. Congressional Research Service. Converting Home Equity Into Income For the Elderly: Issues and Options. Report No. 84-42 E, by B. Ellington Foote. Washington, 1984. p. 17-18.

Post-retirement dissaving could be encouraged through favorable tax treatment of income from home equity conversions. For example, Congress could exempt from taxes or defer taxes on the income derived from a home equity conversion if it were spent on a socially desirable product, such as insurance against long-term health care costs. This could lead in the shortrun to not only lower personal saving, but also to higher Government dissaving at a time when Congress is concerned about the national saving rate. In the long run, the generation that would have received an inheritance from the home equity might save more to offset the loss of inheritance, but this would come at the cost of foregone current consumption. The effects of such tax incentives are, however, so uncertain that it is hard to predict accurately what would happen in the long run.

# CHAPTER 8. SOCIAL SECURITY*

## I. INTRODUCTION

Perhaps the most manifest impact of the aging of America and the retirement of the baby boom will be on the social security system. Because social security is basically a pay-as-you-go income transfer program, payment of benefits when the baby boom retires will come from resources acquired by the U.S. Government from the Nation's productive capacity at that time. Although workers establish claims to benefits by contributing to social security in their working years, benefits to current beneficiaries are financed mostly from taxes on current workers. Because there are projected to be fewer workers for each beneficiary in the future, the aging of the population and the baby-boom's retirement cause social security's costs [1] to rise rapidly in the next century. If social security were actually financed on a "pure" pay-as-you-go basis, this could cause wide and relatively rapid swings in the payroll tax. However, under current law the payroll tax will remain fixed after 1990, which under assumptions used most often in social security forecasting allows the social security trust funds to accumulate substantial surpluses while the baby boom is in its working years. These surpluses presumably will be drawn down to pay for the benefits of the baby boom and subsequent generations. In the aggregate, then, over the next 75 years the system's resources are expected to match roughly its outgo.

Observers can, and often do, question the economic and demographic assumptions on which this forecast is based, but if one accepts them as fairly reasonable, then perhaps at first glance the implications of the aging of America and the retirement of the baby boom do not appear as greatly significant issues. This is probably not the case. There is a critical difference between accepting projections that show the system to be in actuarial balance and assessing how and to what effect the Government will be able to garner resources to keep its commitments, to the trust funds in particular and the aged population in general.

The maturing of both the program and the population also raises another issue regarding equity among the generations—declining "rates of return," or whether future beneficiaries will get their money's worth out of social security. If social security is perceived as a poor investment by the workers who must pay into the system, their support for it will probably decline. This issue too is closely related to demographic changes.

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*This chapter was prepared by Geoff Kollmann, Congressional Research Service.

[1] As the program is financed by a tax on employment, costs are expressed as a percentage of the Nation's taxable payroll.

## II. Background

### A. HISTORY OF THE PROGRAM

The event that initially bred the Social Security program in the United States undoubtedly was the Great Depression. That economic crisis overwhelmed traditional sources of aid for the jobless, aged, widowed, orphaned, and disabled. The Social Security Act of 1935 was one result of the effort to help deal with the crisis. Based in large part on the recommendations of a specially created Committee on Economic Security, President Franklin D. Roosevelt proposed a national program of "social insurance," financed by payroll taxes, for the unemployed and the aged, coupled with assistance to the States for welfare benefits. Enacted on August 14, 1935, the Social Security Act established a Federal system of old-age benefits for retired workers who had been employed in industry and commerce and a Federal-State system of Unemployment Insurance. In addition it offered States grants for cash relief for the needy aged, the blind, and dependent children.

Although social security was given birth by the Depression, its structure was shaped, and continues to be shaped, by longstanding traditions and changing economic and social conditions. Always rich in natural resources, for much of its history the United States was an expanding country with open frontiers and a predominantly agricultural economy. The virtually unrestricted opportunities afforded by such conditions helped establish a concept usually characterized as "rugged individualism", whereby individuals, through thrift, initiative, and hard work, could be expected to provide their own resources to meet any threats to their own economic security. As the country evolved from a primarily agricultural economy to a more urban, industrial one, and workers and their families became more dependent on weekly paychecks provided by others, risks to family security increasingly grew beyond individual control.

By the mid-1920s, both the States and the Federal Government had begun to explore the idea that income losses from several risks—injury, disability, old age, and death—could best be met by the method already adopted by many European countries, that of "social insurance." In concept social insurance provides protection against these risks by paying benefits derived from pooling contributions paid by employees and/or their employers. The first application of this concept was in the area of workers' compensation. The Federal Government enacted a law covering employees of the Federal Government engaged in hazardous jobs in 1908, and the first State compensation law to be held constitutional was enacted in 1911. All but four States had workers' compensation laws by 1929. These laws protected employees against the economic risks of occupational injury and, to some extent, occupational diseases, by requiring that employers compensate workers or their survivors when the worker was injured or killed in connection with his or her job. The beginnings of social insurance can also be traced back to retirement programs for certain workers in the late 19th century, mainly government employees such as teachers, policemen, and firemen.

In general, though, European countries pioneered the development of what is usually accepted as "social security." In the United States, the tradition of reliance on individual effort, the relatively high standard of living enjoyed by workers, and a Federal-State constitutional system that was interpreted by the courts to limit national government action on the subject all were forces acting against expansion of social insurance concepts.

The Great Depression ushered in great social changes. To many, old methods of meeting economic risks of unemployment, old age, disability, and death no longer seemed adequate. As the States and private organizations lacked adequate resources to provide relief against a nationwide economic disaster, the focus of action swung to the Federal Government.

The Social Security Act of 1935 created two national social insurance programs to deal with two fundamental risks associated with economic depression: unemployment and dependence in old age brought about by depletion of lifetime savings. The system of Old-Age Insurance created by title II of the Act provided benefits to individuals who were age 65 or older and who had "earned" retirement benefits through work in jobs covered by the system. Benefits were to be financed by a payroll tax paid by employees and their employers on wages up to $3,000 per year (the wage base). Monthly benefits would be based on cumulative wages in covered jobs. The amount of the benefit was related to the amount of total wages covered by the program, but the formula was weighted to give a greater return, on payroll taxes paid, to low-wage earners. No benefits were to be paid for months in which beneficiaries earned any wages from covered employment (an "earnings test").

Before the old-age insurance program was actually in full operation, important changes were adopted, based largely on the recommendations of the first Advisory Council on Social Security. The 1939 amendments shifted the emphasis of the Old-Age Insurance program from protection of the individual worker to protection of the family, by extending monthly benefits to the worker's dependents and survivors. There was also more emphasis placed on the goal of providing socially "adequate" benefit payments, and somewhat less emphasis placed on the principle of individual equity (amount of benefits linked to the amount of taxes paid). The basis for computing benefits was changed from cumulative lifetime earnings after 1936 to average monthly earnings in covered work, making it possible to pay more "adequate" (i.e., higher) benefits to many workers approaching retirement age at that time and to their dependents. This shift was based on the concept that, as a social insurance system, social security should replace wages lost that formerly provided support for the beneficiaries, rather than merely strictly reflecting the degree to which a person had worked in covered employment. In addition to these changes in program benefits, the 1939 amendments altered program financing, bringing it close to "pay-as-you-go," with the Old-Age and Survivors Insurance (OASI) Trust Fund serving as a contingency reserve fund (not as an actuarial reserve for future liabilities).

For most of the history of social security in the decades that followed, changes to the program were ones of expansion. Coverage of workers became nearly universal; the only large groups remaining outside the system being employees of State and local governments who have not chosen to join the system and Federal workers who were hired before 1984. Congress established a disability insurance (DI) program in 1956, and although it often is not considered "social security," the Medicare program in 1965. Both these programs were financed in whole or in part by additions to the payroll tax rate, which increased periodically, from 1.0 percent of pay on employers and employees, each, to its present level of 7.15 percent. (It is scheduled under current law to level off at 7.65 percent in 1990 and thereafter.) Types of beneficiaries eligible for benefits expanded over the years, and benefit levels were also increased periodically, culminating in a 20 percent increase in 1972.

The 1972 increase was the last of a series of benefit hikes in the late 1960s and early 1970s that substantially increased the real purchasing power of benefits. Coupled with the 1972 legislation was a provision that mandated that, beginning in 1975, benefits rise by the same percentage as the cost-of-living.

Ironically, shortly after the provision went into effect, the Nation entered a prolonged period of inflation and economic stagnation. In 1973 the Social Security Board of Trustees began to project financial problems for the system in both the near and long term. The financing problem grew worse throughout the mid-1970s.

The near-term problem was caused primarily by adverse economic conditions. Much higher-than-expected inflation caused benefit levels and aggregate expenditures to rise rapidly, while lower growth in real wages and higher unemployment caused revenues to grow at an inadequate rate.

For the long-term, (over the next 75 years) it was estimated that costs would outstrip revenues by 75 percent. The large long-term deficit reflected changes in the underlying assumptions about future economic conditions and demographic trends. Under the changed economic assumptions (the primary cause of the projected deficit), future benefit levels would be much higher than intended. In fact, it was projected that if the benefit computation rules were not changed, benefits for many individuals retiring in the future would exceed their earnings before retirement.

Less favorable demographic trends also contributed to the deficit. In particular, the long-term fertility rate assumption was lowered, reflecting a decline in the birth rates starting in the mid-1960s. In a basically pay-as-you-go system such as social security, declining fertility rates are especially important because they mean that fewer workers will be available to support beneficiaries in the future.

The OASI and DI trust funds would have been exhausted in the early 1980s if legislation had not been enacted in 1977 raising taxes and curtailing future benefit growth. The legislation also changed the benefit formula and substantially reduced the long-run deficit.

Even though significant increases in social security taxes were enacted in 1977, the major increases were not scheduled to take effect until 1981 and later. In the meantime, the performance of the economy was much worse than expected. This caused continuing decline in the OASI reserves.

As the forecasts of the condition of the OASI trust funds worsened in the early 1980s, stopgap measures were enacted to buy time for the Congress to assess the significance of the problem. To resolve both the short- and long-term financing problems of the social security system, and to remove it from the political arena, Congress and the President formed a bipartisan panel, the National Commission on Social Security Reform. Acting on its recommendations, Congress passed legislation in 1983 that restored solvency to the OASDI program in the short run and achieved balance over the next 75 years under the most often-used actuarial assumptions.

Although the system now is projected to be in long-run balance, and is running surpluses in the short run, social security no longer enjoys the public's confidence to the extent it once did. In part this may be due to the maturing of the program; for many years social security taxes were low in relation to the benefits they earned, but now the payroll tax is the heaviest tax burden of many workers. There can be little doubt, however that repeated adverse financial reports during the decade preceding the 1983 amendments created a significant degree of public pessimism about the longevity of the social security system. Public opinion polls consistently showed that substantial "doubts" existed as to whether the social security system would survive, or if it did, whether it would provide much of a retirement benefit. Skepticism was most notable among workers under age 45.

### B. PROGRAM PHILOSOPHY

Over the years, it has often been said (to the point of being a cliche) that social security, as the basic retirement income maintenance program in the United States, provides a "floor of protection," a base upon which other forms of retirement income can be built. Indeed, today social security covers virtually all categories of workers, and 95 percent of those attaining age 65 are eligible for its benefits.

Social security has been deliberately designed with social features that redistribute income. For example, benefits to dependents are provided at no extra cost to the worker. In particular, while social security benefits are loosely related to the level of a worker's covered earnings, the benefit formula is designed to replace a higher proportion of average earnings for low-income workers than for high-income workers.

These redistributive aspects are usually referred to as a balancing of the social goals of individual equity and social adequacy. This design provides higher benefits to low-wage earners than they would have if benefits were strictly proportional to earnings. The theory is that lower paid workers are less likely to supplement their social security benefits substantially, while higher paid workers are more able to save for retirement and are more likely to have worked in employment that provides them with private pension income.

Other principles generally adhered to in the development of the Social Security program include the notion that benefits are an "earned right." Basically, this means that no "means test" is applied to entitlement to benefits—they are paid regardless of other income (except earnings from work above a certain exempt amount and, in some circumstances, cash benefits from other Government programs).[2] Traditionally, it has been axiomatic that means-testing benefits would discourage the formation of pensions and individual retirement assets, other forms of income protection that are meant to supplement social security. (It should be noted, however, that many people view the taxation of social security benefits initiated in 1984 as an indirect means test, because whether benefits become subject to the income tax depends so heavily upon receipt of other forms of income.) The linkage of work, payment of specially earmarked payroll taxes, entitlement to benefits based on covered employment, the connection of benefit levels to earnings (and hence loosely to taxes paid), and the absence of a means test have buttressed this concept of an earned right, rather than a "welfare" program, and thus fostered public acceptance.

Closely related principles are that coverage is compulsory and, as it has expanded over the years, nearly universal. Because in almost all cases social security is an automatic accompaniment of employment, workers maintain benefit rights as they move from job to job. Advocates have maintained that if the program were not compulsory, its financial soundness would be undermined because there would be a strong tendency for participation to be concentrated among those who could expect to benefit most by choosing to be covered. Universal coverage has often been promoted as providing every worker's family a bedrock level of economic security, and, as in insurance, minimizing costs to each participant because the risks insured against are spread among the widest possible group.

### C. FINANCING

The social security cash benefit programs (OASDI) and the medicare Hospital Insurance (HI) programs are financed primarily by the social security payroll tax. The tax is a flat-rate tax that currently (1987) applies to the first $43,800 of a worker's earnings. The current OASDHI rate is 7.15 percent for employees and employers equally, and the effective tax rate is 12.3 percent for the self-employed.

TABLE 8.1.—THE SOCIAL SECURITY TAX

[In percent]

| | Employee/employer each | | | | Self-employed | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | OASI | DI | HI | Total | OASI | DI | HI | Credit | Total |
| 1987 | 5.2 | 0.5 | 1.45 | 7.15 | 10.4 | 1.4 | 2.9 | (2.0) | 12.3 |
| 1988–89 | 5.53 | .53 | 1.45 | 7.51 | 11.06 | 1.06 | 2.9 | (2.0) | 13.02 |
| 1990–99 | 5.6 | .6 | 1.45 | 7.65 | 11.2 | 1.2 | 2.9 | ([1]) | 15.3 |
| 2000 and later | 5.49 | .71 | 1.45 | 7.65 | 10.98 | 1.42 | 2.9 | ([1]) | 15.3 |

[1] The self-employment credit expires at the end of 1989, but beginning in 1990 self-employment taxes will be computed on a lower basis and half of the tax will be deductible for income tax purposes.

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[2] In terms of program philosophy, neither the earnings limit nor the offset of income from other Government programs is justified on the basis of testing means. Rather, the earnings limit is described as a test of whether a person is actually "retired," and the offsets of receipts from other Government programs are justified in terms of providing equity and of avoiding windfalls.

The OASDI programs also are credited with income taxes levied on social security benefits, interest income on the securities they hold in their respective trust funds, and various other small internal "payments" from the Government.

Credits for income to social security are provided in the form of Federal securities (not through the transfer of cash). The trust funds hold very little cash; rather, cash income from social security taxes is deposited into the Government's general treasury and a corresponding amount of special Treasury securities are issued to the OASI, DI, and HI trust funds. Credit for interest income and the various other internal "payments" from the Government similarly is provided by recording securities on the books of the trust funds. When disbursements are made to pay social security benefits and other expenses, checks are drawn on the general treasury and the securities held by the trust funds are reduced by an equal amount.

### *1. The Near-Term Outlook*

Since enactment of the Social Security Amendments of 1983, projections of the system's financial condition made by the social security trustees and the Congressional Budget Office (CBO) have shown steady improvement. The reports from the social security trustees contain four separate sets of financial projections labeled "optimistic, intermediate II-A, intermediate II-B, and pessimistic." [3] The report shows that under all four forecasts the OASDI trust funds' income will exceed outlays this year and during the next 5 years. Under the intermediate II-B forecast—the one used most often—the balance in the OSADI trust funds will increase from $47 billion at the end of 1986 to $261 billion at the end of 1991.

### *2. The Long-Range Outlook*

Under the 1987 intermediate II-B forecast, the tax income credited to the system is projected to cover 95.4 percent of the system's costs during the next 75 years. As a result, the trustees deem the system to be in "close actuarial balance." [4]

While projected income and outgo are roughly balanced in the aggregate, the year-to-year projections show a long period in which income exceeds outgo followed by an indefinite period in which outgo exceeds income. The shift from surpluses to shortfalls results from projected swings in the system's relative costs. When shown in terms of the rate of tax that would need to be imposed each year on the Nation's payrolls to cover program expenditures, the projected costs fall by 9 percent between now and 2005, and then rise by 61 percent between 2005 and 2035. Put another way, if the social security (OASDI) system were financed on a pure annual pay-as-you-go basis and exclusively from the payroll tax, that tax would fall from 11.4 percent of the Nation's payrolls today to just under 10 percent in 2005 and then rise again to over 16 percent by

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[3] Social Security Administration. Office of the Actuary. The 1987 Annual Report of the Board of Trustees of the Old-Age and Survivors Insurance and Disability Insurance Trust Funds. Mar. 31, 1987. (Hereafter cited as 1987 OASDI Trustees' Report)

[4] 1987 OASDI Trustee's Report, p. 1. Traditionally, the bounds of "close actual balance" have been defined as income falling within 5 percent of outgo, one way or the other.

2035 (it subsequently would drop slightly and level out at approximately 15.9 percent). In terms of the relative effect on the economy of these swings, social security's costs are projected to drop from 4.73 percent of GNP today to 4.25 percent in 2005, peak at 6.51 percent in 2035, and decline slowly to 6.12 percent in 2060.

However, under current policy social security tax receipts do not rise and fall in tandem with the system's costs. The social security payroll tax (excluding medicare) is scheduled to rise in two steps to a rate of 12.4 percent (employee and employer combined) by 1990, and remain level thereafter. The 12.4 percent rate is considerably more than is needed to finance projected costs through 2016, and when coupled with income credited to the trust funds for interest and income taxes levied on social security benefits, the system's total income is projected to exceed its outgo until 2032. The size of the trust fund would then peak at $12.5 trillion. However, in real (uninflated) terms the peak would have occurred 10 years earlier, when the trust fund would be worth $2.6 trillion in 1987 dollars. This would be an amount equal to 120 percent of the current (end of FY86) national debt and 29 percent of the GNP projected for 2022.

After 2032, income is projected to be less than outgo, but the system is presumed to draw on its large reserve of Federal securities (IOUs from the Government)—resulting from the excess income that arose during the preceding 45 years—to offset the income shortfall. The serve would offset the shortfall until 2051, at which point the system would be technically insolvent.

Figure 8.1.
Projected Social Security
Income & Outgo, Long Range

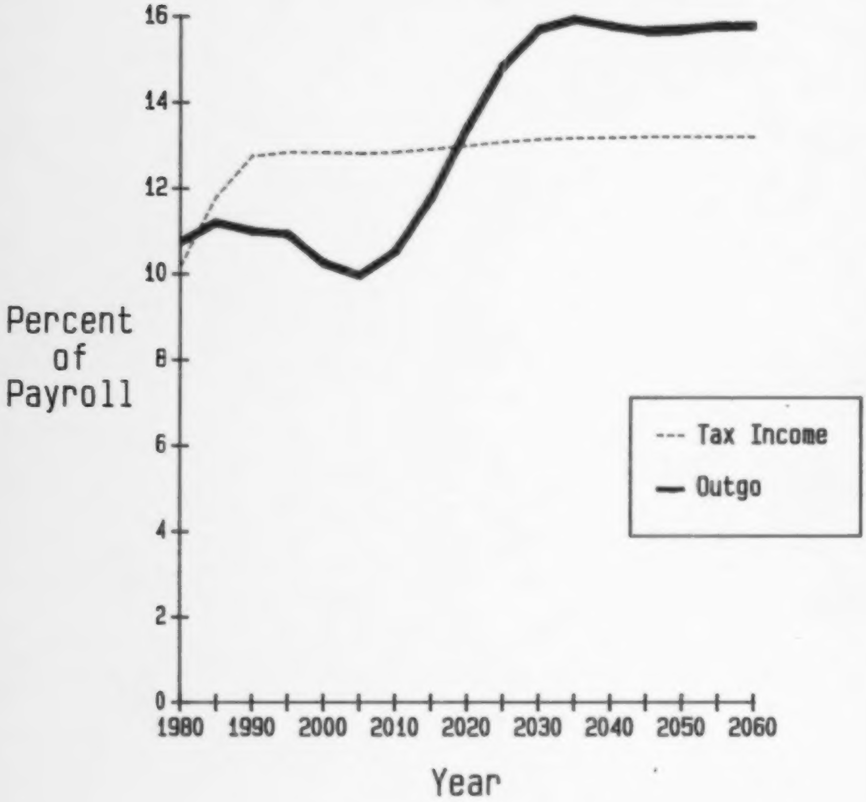
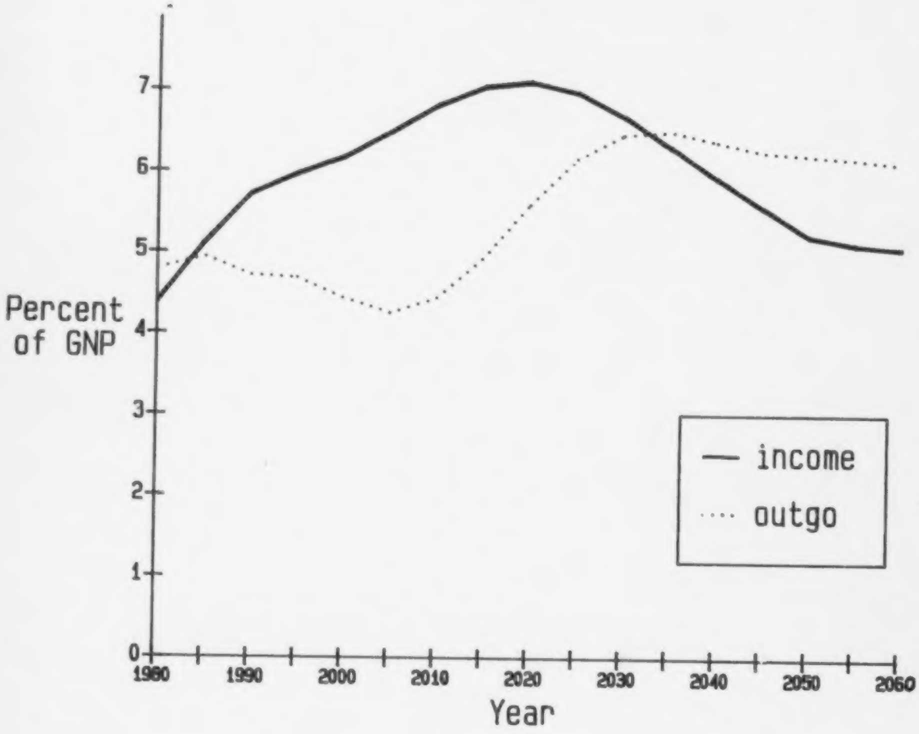


Figure 8.2.
Long Range OASDI
Total Income and Outgo
As Percent of GNP



### TABLE 8.2.—LONG-RANGE OASDI TRUST FUND INCOME AND OUTGO IN CONSTANT 1987 DOLLARS

[Dollars in billions]

| | Income | Outgo | Difference | Income as percent of outgo |
|---|---|---|---|---|
| 1987 | $230 | $210 | $20 | 110 |
| 1995 | 321 | 251 | 69 | 127 |
| 2000 | 371 | 266 | 105 | 139 |
| 2010 | 499 | 325 | 174 | 153 |
| 2020 | 607 | 478 | 128 | 127 |
| 2030 | 664 | 643 | 20 | 103 |
| 2040 | 697 | 750 | −53 | 93 |
| 2050 | 724 | 862 | −138 | 84 |

Source: Derived from Social Security Administration. Office of the Actuary. Actuarial Note No. 130, intermediate II-B forecast, April 1987.

### TABLE 8.3.—LONG-RANGE OASDI TRUST FUND SECURITIES

[In billions of dollars]

| | End-of-year balances | |
|---|---|---|
| | Nominal value | Constant 1987 dollars |
| 1987 | $67 | $67 |
| 1995 | 591 | 425 |
| 2000 | 1,289 | 763 |
| 2010 | 4,489 | 1,794 |
| 2020 | 9,392 | 2,536 |
| 2022 | 10,283 | [1] 2,567 |
| 2030 | 12,411 | 2,264 |
| 2032 | [1] 12,488 | 2,106 |
| 2040 | 10,678 | 1,316 |
| 2050 | 778 | 65 |

[1] Represents peak of projected securities.

Source: Derived from unpublished tables furnished by the Social Security Administration, Office of the Actuary, reflecting the intermediate II-B forecast of the 1987 OASDI Trustees' Report.

This long-range forecast reflects the projected effect of the post-World War II baby-boom generation's retirement and an aging population. During the next few decades, the baby boomers will be in their prime productive years, and the baby-trough generation of the 1930s will be in its retirement years. These two demographic trends are projected to have a stabilizing influence on the ratio of covered workers to social security recipients. This ratio declined steadily from the program's inception through the late 1970s. It has since leveled out at a little more than three workers for each recipient and is projected to remain fairly constant for the next 20 years. When the baby-boom generation retires, however, the number of workers per social security recipient is projected to fall from 3.1 in 2005 to 2.7 in 2015 and to 2.1 in 2025. [5]

TABLE 8.4.—LONG-RANGE RATIO OF WORKERS PER SOCIAL SECURITY RECIPIENT

| | Ratio |
|---|---|
| 1987 | 3.3 to 1 |
| 1990 | 3.3 to 1 |
| 2000 | 3.2 to 1 |
| 2010 | 2.9 to 1 |
| 2020 | 2.3 to 1 |
| 2030 | 1.9 to 1 |
| 2040 | 1.9 to 1 |
| 2050 | 1.9 to 1 |

Source: 1987 OASDI Trustees' Report, intermediate II-B forecast, p. 72

TABLE 8.5.—LONG-RANGE OASDI COMPARISON OF INCOME AND TAXES TO OUTGO, SHOWN IN 25-YEAR AVERAGES

| | Trust fund income [1] as percent of outgo | Taxes [2] as percent of outgo |
|---|---|---|
| 1987–2011 | 142 | 120 |
| 2012–36 | 111 | 91 |
| 2037–61 | 85 | 83 |

[1] Includes all income credited to the trust funds.

[2] Includes from all forms of taxes credited to trust funds.

Source: Derived from unpublished tables furnished by the Social Security Administration, Office of the Actuary, reflecting the intermediate II-B forecast of the 1987 OASDI Trustees' report.

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[5] Under the intermediate II-B assumptions, the number of workers per recipient falls to a low point of 1.9 around 2030 and remains at that level throughout the remainder of the 75-year projection period.

Figure 8.3. Projected Trust Fund Securities
1987-2050
In Constant 1987 Dollars

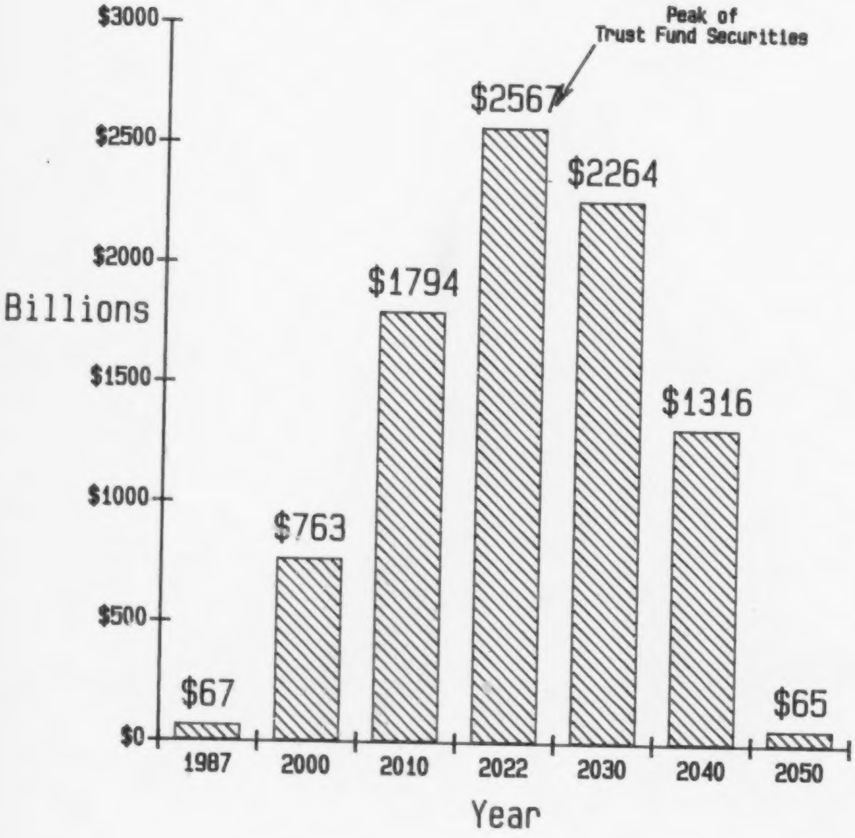
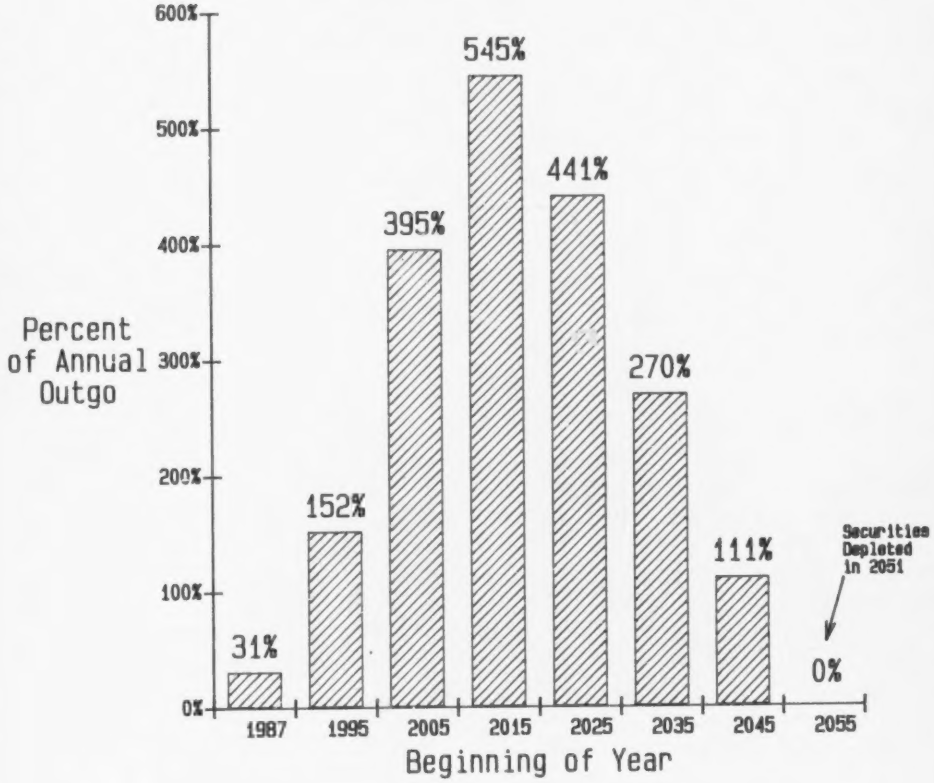


Figure 8.4.
OASDI Trust Fund Securities
As Percent of Annual Outgo



## III. Policy Implications

Of key significance regarding the way social security is structured to pay for the retirement of the baby boom is its relationship to Government finance. Because they are invested in Government securities, the social security trust funds hold part of the national debt. Although attention on the national debt usually focuses on debt held externally to the Government, the debt actually has two components: one consisting of obligations owed to private parties and other non-Federal entities—what might be referred to as external debt or debt held by the public—and another consisting of obligations owed to various Federal agencies and trust funds, such as social security's.

When social security takes in more income than it needs to meet its immediate expenses, the new Federal securities purchased with the excess income are credited to the social security trust funds and become part of the federally held portion of the debt. Thus, to the extent the trust funds rise, the national debt also rises. In exchange for the promise to redeem the securities held by the trust funds at a future time, the Treasury has the use of the revenues raised by the excess payroll taxes. Conversely, when social security spends more than it takes in, the Treasury cashes in some of the securities held by the trust funds. In effect, it repays the loans it received so that social security can meet its immediate expenses. If the Government does not reduce spending on other programs to offset the value of the cashed-in securities, then it must raise revenue through other forms of taxes or sell new Government securities in the financial markets, in order to raise the funds to cash in the securities redeemed by the trust fund. The cashed-in securities are then no longer a part of the national debt.

This arrangement illustrates that although in a formal sense social security income cannot be used for other governmental functions, in certain circumstances it can have that effect. This occurs when payroll tax receipts exceed program expenditures and the Government uses these funds to increase spending or reduce taxes (from what they otherwise would be), or to reduce borrowing from the public that otherwise would take place. In the latter circumstance debt held by the Government would replace debt that otherwise would be held by the public (other things being equal, the total national debt would not change).

The actual use of surplus OASDI funds basically depends on federal budgetary policy. If the budget, which after FY 1985 no longer includes OASDI, were in deficit, the surplus OASDI tax receipts essentially would be used to help finance the deficit (replacing additional borrowing from the public that otherwise would take place). If the excess OASDI tax receipts were greater than the budget deficit, or the budget were balanced or in surplus, the Treasury could use these funds to reduce (or "retire") the amount of the national debt held by the public.

If borrowing from the public were reduced, more of the public's savings would be available for alternative investments. Presumably private investors instead of purchasing or holding public debt would make investments in private enterprises, in this country or abroad, over and above what they would have otherwise. This would allow a higher long-term growth in private capital stock, and, assuming the investments are productive, greater future levels of output, income and consumption. Thus, if the trust fund build-up did result in a reduction of borrowing from the public, national savings[6] would increase, which in theory would lead to increased productive capacity. Indeed, it has been said that "the likely net result of this trust fund buildup will be an increase in national savings and capital formation . . . . As a result of the surpluses then, future generations will have a relatively higher standard of living from which to contribute taxes to redeem the debt when the time comes to pay future benefits."[7]

It is not clear, however, that the trust fund buildup will necessarily lead to increased aggregate savings and capital formation. First, it is impossible to say to what use the excess social security taxes will be put in the coming decades—i.e., whether they will cause less borrowing from other sources, higher spending, or lower taxes than would otherwise occur—or some combination of these effects. If the excess social security taxes were spent on other Government programs or used as a substitute for other forms of taxes, Federal borrowing from the public would not be lowered, and there would be therefore no favorable effect on national savings.[8] Several considerations make this plausible. First, even under the conditions specified by the II-B assumptions, the projected surpluses may never materialize. For example, a potential drain on these projected surpluses may be the Hospital Insurance (HI) part of medicare, which, while highly volatile, is projected under the same II-B assumptions to run a deficit of .44 percent of payroll over the next 25 years and 2.59 percent of payroll from 2012 to 2036. As HI is funded from the payroll tax, and Congress has shifted resources among the OASI, DI, and HI trust funds in the past, it is possible that OASDI surplus funds may be used to shore up HI.[9]

Also, to posit that the social security surplus will result in increased national savings presumes that they will be "set aside" in budget considerations. This outcome may be unlikely if, as they have been for the past 20 years, fiscal decisions continue to be based on a unified budget basis, i.e., including social security. In this regard, it is highly significant that the Gramm-Rudman-Hollings (GRH) deficit reduction measure, while taking social security "off-budget" beginning in FY 1986, nevertheless includes social security's income and outgo to meet the GRH deficit targets. As recognition grows that the true economic impact of Government deficits is measured more by their effect on borrowing from the public rather than by the balance sheet of the general fund, and that such borrowing is directly affected by social security's surpluses or deficits, fiscal policymaking may in fact continue to be made on a unified budget basis.

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[6] In economic terms, the reduction in Federal borrowing would represent net savings by the Government.

[7] Munnell, Alicia H., and Lynn E. Blais. Do We Want Large Social Security Surpluses? New England Economic Review, September/October 1984. p. 14-15.

[8] If the excess social security taxes led to increased spending on Government programs, the nature of the programs may have different effects on the level of national wealth. For example, greater spending on public investments such as education or infrastructure could pay off later in increased productivity and wealth, whereas spending on programs that serve merely to raise current living standards probably would not.

[9] On the other hand, the use of excess social security taxes to help cover costs in the HI program should not necessarily be considered inevitable. Recently, the long-range picture for the HI trust fund has been improving. Four years ago, it was projected to become insolvent by the end of this decade. Now, for a variety of reasons, including cost containment measures enacted by Congress, that insolvency is not projected to occur until after the turn of the century. Continuing concern about the size of the health sector of the economy, and the growing share of the gross national product that it represents, may lead to further measures to restrain Federal health expenditures.

Furthermore, even if more economic growth occurred because these excess receipts led to increased savings and capital formation, when the baby-boom retires the Government would still have to obtain resources from the economy in order to redeem the securities held by the trust fund. Redemption of the Government bonds would require higher taxes, less spending on other programs, or greater borrowing from the public—just as would be required if social security were tacitly financed on a pure pay-as-you-go arrangement. The question is, how should this "burden" on succeeding generations be characterized?

It may be helpful to distinguish two elements of the various concepts of "burden" that often seem to arise in discussions of the impact of the baby boom. One is the sense of dependency, and in the context of the baby-boom's retirement, it is clear that regardless of the means used to finance their social security benefits, retirees basically will be dependent on the output of workers. Another synonym for burden, though, is "imposition," a sense of onerous, even oppressive obligation, that impedes or hinders. In this regard, the question of whether the baby boom is a "burden" on succeeding generations concerns issues of equity and fairness. This distinction between burden as dependency and burden as onerousness can be crucial in discussing the nature of the claims the baby boom will have on the future economy.

For example, from the fairness point of view, it is posited that, if the baby boom added to the productive capacity of the economy through investment generated by their savings, they would not impose a "burden" on society when they retire because the increase in output attributable to that savings would pay for their retirment income. In other words, the workers supporting the baby-boom's retirement should not complain because they would be in the same position they would have been in if the baby boom both had not contributed to national savings during their working years and did not draw retirement benefits.[10] Similarly, to the extent that national savings resulted from an increase in U.S.-owned foreign assets over these 30 years, the cashing-in of such assets (by using them to pay for imports) during the baby boom's retirement might allow succeeding generations to feel less of a "burden" because part of the burden would have been felt earlier—when the United States sent its exports abroad to acquire the foreign assets. (See chapter 4.)

From the dependency point of view, however, the wrench produced by a large segment of the population changing from producers to consumers would in fact be viewed as a "burden." Reaching a consensus on how to garner the necessary resources to make the promised benefit payments would remain a political problem. Those who must do the producing—those who follow the baby boomers—may be unimpressed to be told that they can more easily do so because national savings have risen for 30 years, and therefore that they can bear the "burden" more easily because they are better off than they would have been. While the concept of the baby boom saving for their retirement may describe economic reality, future workers may feel frustrated if they fail to achieve their income expectations because of the high levels of economic resources needed to meet the consumption needs of the generation that preceded them. However unwarranted, the workers of that period could perceive the change in their disposable income as a reduction in their standard of living.[11]

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[10] Aaron, Henry, J. When is a Burden Not a Burden? The Elderly in America. The Brookings Review, Summer 1986. P. 19-20. Mr. Aaron acknowledges that this perspective depends on the existence of effective instruments to control the national savings rate.

The degree of this perception may depend in some measure on how they view relative versus absolute changes in their standard of living. While their economic position may have been enhanced over the years in regard to what they can purchase compared to what previous generations could purchase, they may be more concerned that their standard of living is lower than they believe it otherwise would have been were it not for the demand imposed on their labors because of the retirement of the baby boom.

Also, the fact would remain that regardless of whether social security acquires a "surplus" of Government IOUs, benefits in the future will have to be furnished predominantly by the Nation's production of goods and services at that time.[12] The Government will be extracting relatively greater resources from the economy in order to sustain the consumption needs of a disproportionately large non-producing segment of society. What the Nation will consume 30 years from now cannot, for the most part, be stockpiled. Economic growth and technological advances in the meantime may enhance the Nation's productive capacity, but that growth may not change the significant, and potentially wrenching, effect of a large part of the population changing from producers to retired consumers. Medical care, transportation, food and other perishable goods and many other services that the then-retired segments of society previously helped provide really cannot be "stored" in advance.[13] On the other hand, investments such as skills inculcated to an engineering student in the year 2000 do represent stored services available in 2030, and so would U.S. holdings of foreign assets.

In regard to social security, economic growth should not be viewed as the sole solution to any potential problems arising from the baby-boom's retirement. Because social security is basically an indexed system, economic growth to a certain extent leads to higher absolute (not relative) costs. This occurs because benefits are tied to average wage levels. If economic growth is reflected in higher wage levels, this will eventually lead to higher benefit levels, and thus higher costs (measured in absolute terms). In other words, the system has a self-adjusting element to it. Put another way, if society grows wealthier and this increase in wealth leads to higher social security benefits, would not the "burden" remain approximately the same, even if the Nation's economic base were expanded? This point of view has some validity and does have a bearing on the argument about whether the Nation can "outgrow" any potential problems in the baby-boom's retirement. However, as illustrated later, higher wage-growth does lower the system's relative costs as measured against the Nation's taxable payroll. (The primary reason this occurs is because of the lag between the increase in taxes paid on the higher earnings and the payment of benefits based on these earnings.)

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[11] Koitz, David S. [Forthcoming paper on the social security surplus.]

[12] (Supplemented by the drawdown of capital and inventories, and perhaps by net imports, as when Federal debt is purchased by foreigners.)

[13] Koitz.

The key consideration is that social security cannot be regarded as a fixed cost whose importance can be proportionately lessened by simply expanding economic growth. To a certain extent, social security will grow as the economy grows, and thus economic growth alone will probably not substantially change the effect of the retirement of the baby boom on social security.

Social security's effect on Government finance begets other issues. Because social security's projected surpluses can lower Federal Government borrowing from the public, in the present budgetary environment they can lower pressure to cut other programs or to increase other Government revenues.

In the 1990s, as the surpluses really begin to mount, they may have the effect of hiding the true cost of other Government programs, or they may permit expansion of Government programs or curtailment of efforts to contract them. It is troubling to some analysts that the functioning of Government could come to rely so heavily on the payroll tax, which they feel is regressive. Indirectly, lower-paid people, who it is alleged have borne the brunt of cuts in Federal social spending, would be paying heavily to finance Government, and their doing so would help keep more progressive levies from being increased. From another perspective, however, the mounting surpluses of the social security funds pose a different problem. If the accumulation of surpluses drains purchasing power from the economy, a case can be made that unless a deficit is run on other Federal accounts, the Federal sector may exert too much drag on demand and help cause recessions or worse. This point of view was expressed by a Washington Post editorial of September 5, 1986: "As social security is currently set up, it is necessary to run large deficits in the general fund for the rest of the century, or social security will choke off growth."

In any event, if the surpluses were used to reduce other taxes, increase spending on other programs, or reduce borrowing, this might lead to long-term expectations of Government services that would probably be deflated when the baby boom retires. For example, people might come to expect more from the Government for a given amount of other (non-social security) taxes. Later, when excess social security taxes were no longer available, that level of Government service could be maintained only by raising those other taxes. In other words, the "advance" funding of social security might foster new forms of demands upon the Government. This scenario could lead to additional taxes being levied on future workers: to pay for higher social security outlays, and to pay for Government activities that formerly were financed from excess social security taxes.[14]

Even if excess social security taxes did lead to national wealth that would not otherwise exist, these questions persist. With all these ramifications, one may ask why such surpluses should be accumulated. Why not create a future schedule that would match the system's immediate costs? Are not the practical consequences, for the Government as a whole, the same? In effect, it could be averred that the program will be financed on a de facto pay-as-you-go basis anyway, so why not make it explicit?[15]

Explicit pay-as-you-go financing would not alter (but would make more evident) the growing dependence on future workers to meet the benefit commitments to the baby-boom and later generations, and hence would not directly address the long-range political and economic questions that arise therefrom. However, pay-as-you-go financing would address several concerns regarding the potential social security surplus. Some analysts are uncomfortable with the possibility of social security potentially holding virtually all the national debt. They warn that this could disrupt traditional methods of Government finance; for example, if the Federal Reserve could not sell Government securities to banks and private parties (open market operations), the ability to use monetary policy for economic stabilization and growth would be limited.[16] Pay-as-you-go financing would also alleviate the concern that the surpluses might be used, not to increase capital formation and economic growth, but instead to offset deficits elsewhere in the budget, which would cause general Government expenditures for the next 30 years or so to be financed by the relatively regressive payroll tax rather than the more progressive income tax.[17]

Even if the surplus should lead to increased national savings, capital formation, and economic growth, there is debate about whether the payroll tax is the appropriate means to promote such growth. The issues involved are mostly ones of equity. Henry Aaron, an economist at the Brookings Institution, has expressed these concerns:

> If our objective is to increase the rate of capital accumulation, we should ask which instruments are best for achieving that end. Prominent on the list would be direct assaults on the federal deficits, incentives to business investment, and the withdrawal of incentives that promise inefficient investments.
>
> * * * If one turns to other instruments such as a reduction in the government deficit to increase national saving, it might be argued that creating a large surplus in the social security trust funds is a good way to achieve one's goal.
>
> The question that this suggestion raises is whether reductions in social security benefits or increases in the payroll tax are the ways to achieve a reduction in the

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[14] Ibid.

[15] The accumulation of the large reserve is not really a deliberate goal. Congress over the years has generally adhered to the recommendation of several Social Security Advisory Councils that the trust funds build up a reserve sufficient only to allow the system to weather economic downturns. In 1972, when Congress enacted large benefit increases and introduced automatic indexing for wages and benefits, it scheduled a tax hike in 2011 to cover the increased costs of the baby boom's retirement and keep the system in actuarial balance. As long-range projections worsened, Congress accelerated the 2011 increase, first to 1990 and then to 1988. These changes were chosen as a means of reassuring the Nation that the system was solvent in the long run; the accumulation of surpluses was of secondary concern.

[16] Munnell, Social Security Surpluses, p. 17. It is not clear, however, why Federal open-market operations could not be conducted with any financial security and have the same effect on the money supply.

[17] Ibid., p. 16.

> government deficit that are most conducive to economic efficiency and fairness. Why should benefit reductions or payroll tax increases, rather than increases in other taxes or reductions in other government spending, be used as the instrument to raise total savings?
>
> * * * If we wish to increase capital formation, the proper objective is the total saving rate, and that raising social security payroll taxes or cutting social security benefits is a poor device for achieving that objective unless we favor them on other grounds. We should make social security policy on the basis of considerations other than its supposed effects on saving.[18]

There is another perspective on equity, however, and it has to do with perceptions of fairness *within* the Nation's retirement system. In the social security system true pay-as-you-go financing would likely raise broad questions of generational equity. Sometimes the question is put in terms of the baby boom's paying its way by storing up funds for later use. As discussed above, this is not really meaningful because of the way social security affects Government financing. However, if one accepts that the social security surplus would be used for capital formation and an increase in the Nation's productive capacity, then "the projected trust fund accumulation may be viewed as an attempt to avoid an excessive tax burden on future generations after the first quarter of the next century." [19]

If one views the incidence of the social security tax as regressive, the roller-coaster effect on tax rates of pay-as-you-go financing raises large distribution questions. The Federal Government must extract resources from the economy at the time of the baby boom's retirement irrespective of whether there is a large trust fund, but the form of that extraction could be different if the method used were to increase the payroll tax rapidly. In terms of distributional equity, the question is whether it is better to spread a "regressive" tax evenly across the generations, or to allow the baby boom to pay taxes equivalent to 9.94 percent of taxable payroll while succeeding generations would pay at rates as high as 16.06 percent (under the II-B assumptions.) Although the current arrangement may be viewed as not substantially different from true pay-as-you-go, under it the benefit costs arising in the next century, ostensibly financed out of social security reserves, would be met by less regressive means.

### A. RATES OF RETURN: THE RELATIONSHIP OF TAXES AND BENEFITS FOR FUTURE BENEFICIARIES

Another matter of equity between the generations concerns the rate of return, or "money's worth" that workers receive from social security for their payroll taxes. Today's retirees on average receive more, often far more, than the value of the social security taxes they have paid. This is true whether or not contentious factors such as interest or the employer's share are included in assessing the value of accumulated taxes.

It has been stated that those retiring recently receive benefits that are about three times as large as the sum of their employee and employer taxes, assuming the taxes were invested and earned a real (i.e., above inflation) interest rate of three percent. Projections show that future recipients will get a much worse "deal" from the program.[20]

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[18] Aaron, Henry J. Economic Effects of Social Security. Washington, The Brookings Institution, 1982. p. 51-52.

[19] U.S. General Accounting Office. Social Security Past Projections and Future Financing Concerns. March 1986. p. 65.

Analysis by the Congressional Research Service looks at this issue a different way, comparing the amount of time it takes retirees, now and in the future, to recover the value of their social security taxes plus interest under the II-B assumptions. For example, a worker retiring at age 65 in January 1987, after having always earned an average wage in covered employment beginning at age 21, would recover the value of his and his employer's OASI taxes plus interest in 9.8 years. This compares to a life expectancy of 14.7 years (men) and 18.9 years (women) under the II-B assumptions. For a similar worker retiring at age 65 in 2000, however, it would take 15.4 years to recover the value of taxes plus interest. This compares to a life expectancy of 15.6 years (men) and 20.1 years (women). In the year 2040, the recovery time becomes 19.3 years compared to a life expectancy of 17.0 years (men) and 21.9 years (women).[21]

Defenders of social security tend to discount this phenomenon, arguing that the program serves social ends that transcend calculations of which individuals, or generations, obtain some sort of balance-sheet profit or loss. They point out that basically pay-as-you-go systems such as social security by their nature provide large returns on the contributions of the initial generations. In the early years of such programs, the ratio of workers to recipients is very high, allowing tax rates to be low. As the program matures, tax rates rise to reflect the increase in the number of beneficiaries. This is not unique to social security. Establishing benefit levels for early recipients in excess of what contributions would dictate is also found in private pension systems.

Furthermore, proponents argue that providing "adequate" benefits to initial recipients that were essentially "unearned" in relation to their contributions to the system was a deliberate social policy. Providing a minimum level of protection to the first workers to participate in the system was considered more important, in a period of economic depression, than concerns about excessive rates of return on taxes paid. Besides, the social benefits of giving a measure of economic independence for the elderly, and later for orphaned children, surviving spouses, and the disabled, are valued highly. For example, younger workers are in large part relieved from the financial burden of supporting their parents, and the elderly are afforded an opportunity to live independently and with dignity.

Critics point to these social welfare features as a basic flaw in the program that creates inequities. They say that one of these inequities is that future beneficiaries will on the whole receive benefits inferior to those that the equivalence of their taxes could purchase in the private sector. Furthermore, it is averred that if interest is included, some categories of workers will not even recoup in purchasing power what they and their employer paid in taxes. Often buttressing these arguments are calculations that show what individuals could receive if their social security taxes were invested privately.

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[20] Boskin, Michael J., Lawrence J. Kotlikoff, Douglas J. Puffert, and John B. Shoven. Social Security: A Financial Appraisal Across and Within Generations. Working paper no. 1891. Cambridge, Mass., National Bureau of Economic Research, Inc., 1986. p. 4.

[21] These calculations do not take account of the taxation of social security benefits, which will increase in the future because the thresholds beyond which social security becomes partially taxable are not indexed to take into account expected increases in the income of future retirees. Although the social security benefits is still paid in full, the provision may be regarded as a reduction in benefits. A reduction of benefits, of course, increases the period over which it takes to recover social security taxes. Because the taxation of benefits affects future beneficiaries more, it can exacerbate perceptions of intergenerational inequity.

Such calculations can vary tremendously depending on the assumptions and methods used. They may or may not include the employer's share of the payroll tax or assign a value to survivor benefits. They also are very sensitive to interest rate assumptions. Regardless of the methods or assumptions used, the perception of intergenerational inequity is heightened by such calculations.

A different picture would emerge, however, if social security were placed on a true pay-as-you-go basis, that is, if surpluses were not accumulated. If each year's income were made approximately equal to outgo, OASDI tax rates would decline to about 4.8 percent on employees and employers, each, by 2005 but rise to about 7.7 percent by 2035. Such variations in taxes would produce significant swings in the relationship of taxes versus benefits, depending on one's age cohort.

The generations following the baby boom would be at a particular disadvantage. Their rates of return on their social security taxes, already low because the system would be fully mature, would be lowered further because of the higher social security taxes they would pay under this arrangement. Under current law and the II–B assumptions, a baby boomer born, say, in 1955, and a future worker born in 1995, both of whom always earned the average wage and retired at age 65 would recover the value of their and their employer's OASI taxes in approximately the same amount of time.[22] Under pay-as-you-go financing, however, the recovery times become 17.4 and 24.8 years, respectively.[23]

TABLE 8.6.—NUMBER OF YEARS TO RECOVER COMBINED EMPLOYEE–EMPLOYER OASI TAXES PLUS INTEREST FOR AGE 65 WORKERS RETIRING NOW AND IN THE FUTURE UNDER THE II–B ASSUMPTIONS [1]

| | Minimum earner (years) | Average earner (years) | Maximum earner (years) |
|---|---|---|---|
| Illustration 1: Current law: | | | |
| Year of retirement: | | | |
| 1987 | 7.2 | 9.8 | 12.2 |
| 2000 | 10.8 | 15.4 | 20.8 |
| 2020 | 13.1 | 19.5 | 31.3 |
| 2040 | 12.5 | 19.3 | 32.5 |
| 2060 | 12.4 | 19.3 | 32.4 |

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[22] 19.5 and 19.3 years, respectively. The slight difference is mainly due to high real interest rates in the 1980's.

[23] One can argue that viewing recovery times on a true pay-as-you-go basis is really a more accurate way to assess intergenerational equity in regard to the relationship of social security taxes and benefits, because the accumulation of social security surpluses masks the true demand on the nation's resources that social security benefits for the baby boom will cause.

TABLE 8.6.—NUMBER OF YEARS TO RECOVER COMBINED EMPLOYEE-EMPLOYER OASI TAXES PLUS INTEREST FOR AGE 65 WORKERS RETIRING NOW AND IN THE FUTURE UNDER THE II-B ASSUMPTIONS [1]—Continued

| | Minimum earner (years) | Average earner (years) | Maximum earner (years) |
|---|---|---|---|
| Illustration 2: Pay-As-You-Go: | | | |
| Year of retirement: | | | |
| 2020 | 11.9 | 17.4 | 27.4 |
| 2060 | 15.7 | 24.8 | 43.7 |

[1] Taking into account projected cost-of-living-adjustments and continued accrual of interest after retirement.

Source: Congressional Research Service.

### B. INTERGENERATIONAL EQUITY AND WEALTH

Discussions of intergenerational equity usually evolve to a central question, pertinent to social security as well as to other areas that compare the well-being among age cohorts. What degree of affluence do we expect society to have in the future? In one assumes that future generations will be wealthier, a view consistent with long-term historical trends, then one can plausibly argue that it is wrong to over-tax current workers to accumulate surpluses (or more accurately, to force the baby-boom generation to save more to promote investment and economic growth) because the generations that follow, being wealthier, can and should afford to pay for the baby-boom's benefits.

There is another school of thought, though, that is concerned that "We may be the first society in history of which it can be said that children are worse off than their parents." [24] It has been expressed that "In the new America, the old are being enriched at the expense of the young, the present is being financed from tax money expropriated from the future and one of the legacies children appear to be inheriting from their parents is a diminished standard of living." [25] If current over-consumption is eating the seed-corn of future generations, in other words, these generations may not be much wealthier, and not able to bear the burden of the baby boom's retirement easily.

While these views may be irresolvable, in regard to social security their effects are quantifiable. Financing of social security is predicated on the system being in actuarial balance, and under the II-B projections it is. These projections assume real wage growth in the future (leveling out at 1.5 percent a year in the next century), a reflection of projected productivity increases and a steadily rising standard of living. In other words, the II-B projections do assume that society will be wealthier on a per capita basis. What is more, if this increase in the standard of living does not occur, the system will be under-financed. For example, if long-term real wage growth were less, say 1.0 percent rather than 1.5 percent, the actuarial balance would drop by 0.81 percent of payroll, meaning that benefit cuts or payroll tax increases would have to be put in place over the next 75 years to restore the program to the financial position it is projected to be in today.[26] This obviously would affect calculations of measures of intergenerational equity.

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[24] Senator Daniel P. Moynihan, as quoted by Paul Taylor. The Coming Conflict As We Soak the Young To Enrich the Old. Washington Post, Jan. 5, 1986. p. D1.

[25] Taylor. p. D1.

What this means is that wealth, at least in the form of increased wages, has to grow in the future in order to make meaningful comparisons of equity under current-law benefit and tax rates. If the growth in wealth does not occur, intergenerational equity considerations in regard to social security will probably become secondary to solving persistent long-term fiscal crises. (Depending on how these crises are solved, however, problems in intergenerational equity may be exacerbated.)

## IV. POLICY OPTIONS

If Government retirement income programs, regardless of whether they use pay-as-you-go or partial advance funding, place the Government in the position of having to impose additional taxes in one form or another on future workers or to reduce other Government programs, more reliance on private means might be explored to relieve this potential problem. To the extent that private sources of retirement income were substituted for part of social security in the future, the need to increase taxation (or reduce benefits or other Government spending) could be lessened.[27]

It is sometimes argued that substituting private retirement savings for social security taxes would promote greater economic growth. This would, in theory, provide a greater economic base to draw upon later to pay for the baby boom's retirement benefits. However, a reduction in payroll taxes alone does not guarantee that private retirement savings will increase, i.e., the tax reduction could be consumed. If a mechanism were used to ensure that equivalent funds were invested privately rather than paid to the Government in taxes, it still would not necessarily result in increased economic growth—it depends upon how the money is used. This would assume that those private sources were fully funded in wise investments, and not allowed to be drawn down for preretirement consumption. As mentioned before, it has also been suggested that the Government could use excess social security taxes to raise savings and promote economic growth.[28]

This discussion is part of a broader debate about the most effective means to stimulate economic growth. What is pertinent in this analysis is the conclusion that replacing part of social security's role by private retirement savings still raises the same question: What are the economic ramifications of having fewer producers for each retiree? Even if private investment of what would otherwise be social security taxes resulted in greater economic growth, the draw on society to meet the consumption needs of the retired baby-boomers and later generations might not be essentially different.

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[26] 1987 OASDI Trustees' Report, p. 98.

[27] There have been several suggestions on how to do this. One way is to reduce social security's role by indexing future benefits to the change in prices rather than wages. As wages are projected to grow faster than prices, future replacement rates would decline rather than be constant as in current law. This would cause social security's costs to drop and in theory make more room for private sources of retirement income. Other proposals would (1) allow workers to forego part of their future social security benefits by contributing instead to private instruments such as IRAs, and (2) modify the social security program to pay welfare-related or annuity benefits only. Increased taxation of social security benefits could also be used to reduce payroll taxes, and could be supported by some as an indirect way to better align benefits with need.

[28] Koitz.

The magnitude of the effect of the aging of America may depend heavily on future attitude concerning retirement. Future generations are assumed to retire at about the same ages that people do today. They are expected to live longer, but they are not expected to work longer, even though the age for full retirement benefits rises to 67 by 2027, and the delayed retirement credit and the earnings test will be liberalized in the 1990s.[29] A possible policy response in this area might be to raise the retirement age further. This might be justified not only as a way to reduce the costs of social security, but also as a way to bring the time spent in retirement for future beneficiaries closer to what was envisioned at the time of the original Social Security Act. For example, a male retiring at age 65 in 1940, the first year in which social security benefits were payable, had a further life expectancy of 11.9 years. A male retiring at age 65 in 2020 is predicted to have a further life expectancy of 16.3 years. (The figures for females are 13.4 years and 21.0 years, respectively.)[30] As the raising of the full retirement age to age 67 is not predicted to increase significantly the age at which people retire, it probably would be more effective to raise the age at which reduced retirement benefits can be taken. Alternatively, the amount of the reduction for early retirement could be increased.

Weighed against such proposals must be considerations that not everyone may be likely to benefit from improvements in longevity. Certain people may not be able to work longer because they are in poor health. Others may be unable to locate work after losing their jobs late in life. In other words, there may be people who, through no fault of their own, may be unable to find an alternative source of income to make up for lower social security benefits. From one point of view, such people should not be penalized for the longevity of others.

Related to the issue of the elderly's inability to adjust to changing circumstances is the problem of the "old old." As highlighted in chapter II, the proportion of people over age 80 is projected to increase rapidly in the future. These people might remain on the social security rolls for many years. Their social security benefits would be fully adjusted for inflation, but other sources of income might not. Indeed, income from assets might be fully exhausted. Moreover, not only might their real income decline during retirement, their living expenses might grow because of rising health care costs associated with aging. Even if the purchasing power of benefits were maintained, after a long period of time a beneficiary's standard of living would, under the II–B projections, fall significantly behind that of workers retiring then. It was these considerations that led the 1979 Advisory Council on Social Security to contemplate recommending that those over age 85 receive a social security supplement (a one-time benefit increase of 10 percent). The Council ultimately rejected this proposal, however, because it was not tightly targeted to real need, and in many cases the problem could be more appropriatedly addressed by welfare programs.

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[29] The full retirement age (the age at which one receives unreduced benefits) will rise gradually from age 65 to age 66 over the period 2003 to 2009, and will rise again to age 67 from 2021 to 2027. Benefits will still be available as early as age 62, but the actuarial reduction will increase (benefits taken at age 62 eventually will be 70 percent of those taken at age 67, whereas today they are 80 percent of those taken at age 65).

The delayed retirement credit (DRC), which is a increase in benefits given to those who retire later than the full retirement age, currently is equal to ¼ of one percent for each month (3 percent a year) beyond the full retirement age that a person does not receive benefits. The DRC will increase gradually to ⅔ percent per month over the period 1990 to 2008.

The earnings test currently withholds one dollar in benefits for every two dollars a beneficiary earns from work above certain threshold amounts. For those attaining the full retirement age in 1990 and later, one dollar in benefits will be withheld for every three dollars in earnings above the exempt amount.

[30] 1987 OASDI Trustees' Report, intermediate II-B forecast, p. 36.

Other possible policy options in the area of benefit adjustments could include an examination of the social security benefit formula. For example, if there is concern that pension coverage will remain inadequate for lower-paid workers in the future, some may advocate that the weighting of the formula be increased to narrow the gap in overall retirement income between lower- and higher-paid workers. On the other hand, there may be pressure to increase replacement rates for higher-paid workers, because their lower rates of return on taxes paid are the ones most often cited as to why social security is a "bad deal." Whichever way the formula is adjusted, if the change is not "cost-neutral," the program's actuarial balance will be affected, with the ramifications on intergenerational equity discussed previously. A zero-sum game occurs if it is cost-neutral, as increases for one group come at the expense of another.

Benefit computations may also be examined to see if they reflect changing social conditions. The increased participation of women in the work force and the change in the "traditional" family have led to proposals for earnings sharing among couples and other modifications of the way social security treats women. II–B projections show that the labor force participation rates for women will increase in the future, but remain below those of men.[31]

Proposals to make social security's future treatment of women more fair seem to have two basic perspectives. One would improve the relative position of women who work or are divorced. If costs are not to be raised, payment for increased benefits would come from a reduction in benefits for other workers. Another perspective would be to reduce or eliminate spousal dependent benefits. It has been postulated that in the next century "women without ten years of paid work will be primarily those who have been disabled (for whom there is a social security permanent disability benefit), the very wealthy, and a few women who have relatively large families." [32] Thus, it has sometimes been recommended that the dependent spouse retirement and survivor benefit be gradually reduced or eliminated, on the basis that (1) the fewer number of spouses qualifying for it would not really need it, and (2) it would eliminate the disadvantage two-earner couples usually have compared to single-earner couples, an inequity often mentioned in regard to social security's treatment of women. Increasing work by divorced spouses is also cited, not only as a reason for no longer needing dependent spouses' benefits, but as evidence of the inappropriateness of continuing the concept of the traditional family as the basis for social security benefits.[33]

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[31] 1987 OASDI Trustees' Report, p. 83.

[32] Campbell, Rita Ricardo. Retirement Income. National Journal Issues Book. 1980. p. 69.

Nevertheless, women are still projected to work less, and may continue to earn less, than men. It may be felt that protection for dependent spouses should be left more or less intact. A pertinent distinction in this discussion is that the two perspectives described above tend to go in opposite directions in regard to the system's costs. This distinction is important because of the role that future benefits and taxes play in analyzing intergenerational equity.

Finally, it has been suggested that the shift in the profile of the population may result in future labor shortages, and that this could cause many workers who would otherwise choose to retire to remain in the workforce. If there were more workers for each retiree than is currently projected, it probably would reduce pressure on all sources of retirement income, public and private. The cost of these systems may or may not be lower—depending on whether work tests or actuarial adjustments apply—but more workers would mean greater contributions to these systems. Also, a short supply of labor may drive up its costs, so that increased wages could perhaps offset the rising costs of providing for the retirement of the baby boom. On the other hand, if people delayed retirement, more workers might lead to higher economic output than would otherwise occur, which would enable society to meet better the needs of those who do retire.[34]

The Nation may decide different ways of dividing the roles of social security and private means in providing future retirement income, but it should not be assumed that potentially higher retirement costs can be provided simply by building up the social security trust funds, or by altering the means by which those higher costs are financed. In the final analysis, by whatever means retirement income is provided in the future, the wrench produced on society by the retirement of the baby boom in the next century may be affected only marginally by market conditions then or by changed policies or attitudes about later retirement. It is probable that no matter how much economic wealth can be converted to provide given levels of retirement income, the amount of goods and services that will be available at that time will depend heavily on the part of the population able and willing to produce them.[35] Finally, because of the way social security benefits are determined and financed, economic growth in and of itself will probably not substantially change the effect of the retirement of the baby boom on social security.

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[33] Ibid., p. 70.

[34] Koitz.

[35] Ibid.

# CHAPTER 9. PRIVATE PENSION PLANS*

## I. The Legislative Environment of Pensions and Related Plans

Employer-sponsored pensions and deferred profit-sharing plans began in the late 19th Century and expanded steadily until they covered about one-fourth of the labor force by 1929. In this initial phase, the arrangements typically were informal, discretionary, and financed from current operating funds. Pensions were regarded more as gifts in recognition of "long and faithful" service than as deferred compensation, as such. Employees rarely had any contractual rights in their pensions, and no Federal statutes regulated their terms and conditions. Although Congress gave pensions and profit-sharing plans their key tax preferences in the 1920s, these advantages probably contributed little to worker demand for such plans during this initial period. Few households were then liable for any income tax and, if they were, they faced low rates.

Pensions generally collapsed during the Depression; not until the late 1930s did they begin to revive. In the 1940s, some special factors joined together to greatly encourage their growth. Pensions and other deferred compensation were exempted from war-time wage controls, and court decisions clarified that pensions were subject to collective bargaining. In addition, the expansion of the income tax, especially with high progressive rates, made the tax advantages of pensions considerably more valuable to large numbers of employees.

Pensions continued to grow during the 1950s and 1960s, probably encouraged by the continuation of high income tax rates (and an increasing payroll tax), and by the collective bargaining efforts of organized labor. The nation also was growing increasingly wealthy in an environment of relative economic stability; some of that increased wealth was set aside for both future and current retirement income. This period also saw the spread of the defined benefit (DB) pension in settings where that type of pension could serve various economic, as well as retirement, purposes. Between 1950 and 1970 the percentage of the workers covered by a pension or profit-sharing plan maintained by a private employer doubled, from 22.5 percent to 46.2 percent. Contributions also doubled, from 1.67 percent of total payroll in the private sector to 3.25 percent. Since 1970 the growth in coverage has leveled-off, but the contribution percentage has nearly doubled again (to 6.68 percent by 1980).

### A. TAX POLICIES

As pensions became an important component of retirement wealth during the decades since World War II, the Federal Government increasingly intervened with more legislation and regulation. The initial basis for Federal legislation was a policy concern that the tax advantages of pensions and similar plans not accrue only to a select few. The tax policy objective can be traced back to both the 1938 Revenue Act and the 1942 Revenue Act. The earlier law included a "non-diversion rule." This rule stated that it must be impossible at any time prior to the satisfaction of all liabilities under the pension trust for any of the funds to be diverted to purposes other than the "exclusive benefit" of the employees covered by the plan. The 1942 Revenue Act introduced into the tax code the principle of "non-discrimination" in coverage, benefits, and contributions. Pensions and profit-sharing plans that conform to these and other conditions in the tax code typically are called tax-qualified or, more simply, "qualified" plans.

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* This chapter was prepared by Ray Schmitt, Congressional Research Service, David Lindeman, Congressional Budget Office, and Edwin Hustead, Hay-Huggins, Inc.

### B. RETIREMENT INCOME SECURITY

In more recent decades, Congress also has legislated on the premise that explicit national standards are needed to govern the operation and terms of private pension plans—whether or not any tax advantages are involved. The need for legislative standards concerning DB pensions was deemed particularly pressing given the complex nature of those arrangements. In addition, Congress has been concerned that employers' promises about their pensions be backed with resources. The Employee Retirement Income Security Act of 1974 (ERISA) is the seminal legislation on these matters.

Some of ERISA's provisions—those that concern reporting and disclosure, fiduciary standards, and even those that prescribe certain standard terms—have no direct bearing on eligibility for promised benefits. Other provisions—those concerning participation, vesting, benefit accrual—directly affect eligibility and future benefit payments. The latter provisions are contained in two titles of ERISA: (title I) as part of ERISA's labor law provisions, and (title II) as part of the tax code's provisions for qualified plans. The rules regarding the funding of pension plans also were included in both titles.

### C. EXEMPT PLANS

The only exceptions to ERISA's labor law provisions and the tax code are for plans that pay benefits exceeding the levels allowed in qualified plans ("excess benefit" plans) and for similar plans that cover only select groups of management or highly compensated employees (often called "top hat" plans). These plans are excused from most of ERISA's labor law provisions. Because they are not tax-advantaged, they are known as "non-qualified" plans and are beyond the tax code's rules. However, for participants in one of these non-qualified plans to avoid having to pay taxes on their accounts before retirement (that is, to avoid "constructive receipt"), the non-qualified plan must be "unfunded" in the technical sense that any assets backing it must be subject to the sponsoring employer's general creditors.

### D. PENSION BENEFIT GUARANTY CORPORATION

ERISA also established the Pension Benefit Guaranty Corporation (PBGC). The PBGC assures that, up to certain levels, benefits from DB plans will be paid even if a plan lacks sufficient assets and the sponsoring employer is unable to make up the deficiency. The PBGC is financed by premiums paid by plan sponsors for covered workers and earnings on assets.

As discussed later, the employer who sponsors a DB pension is required to make up whatever funding shortfalls are necessary to pay the plan's accrued benefits. In effect, the employer stands behind the plan as an insurer against investment risk. Employers, of course, can insure plans against investment risks only when they continue in business. If an employer that is bankrupt or on the verge of bankruptcy, closes down a DB plan that has insufficient assets to pay off accrued benefits, the PBGC assumes those liabilities and makes the payments instead. For pension plans ending in 1987, the maximum pension guarantee is $1,858 a month. (The maximum limit is reduced for early retirement or recent benefit increases.) All sponsors of DB plans must pay premiums to the PBGC for this insurance. Currently, these premiums are an annual flat dollar amount ($8.50) for each participant.

By its nature, the PBGC protection for participants is limited to the nominal value of benefits that have accrued at the time the plan ends. It does not apply to any increase in the value of those benefits, or to credits for additional years of work, that workers might have expected from the plan. Thus, the workers who receive most protection from the PBGC system are those who either have already retired or are relatively close to retirement.

## II. TYPES OF RETIREMENT PLANS

Most retirement plans are sponsored by employers. A few, however, are maintained by employee organizations (almost always, unions) either solely or jointly with employers. Retirement plans are either defined benefit (DB) or defined contribution (DC) plans. Plans also are either pensions or some other kind of arrangement, usually a profit-sharing plan.

In a pension plan, the sponsoring firm commits itself to annual increments in benefits or contributions for each year of work under the plan, regardless of the firm's profitability. All DB plans are pensions. A relatively few number of DC plans—called money purchase plans—are classified as pensions. Most DC plans are profit-sharing plans. In a profit-sharing plan, the sponsoring firm does not have to make contributions in a year in which it has little or no profits.

### A. DEFINED BENEFIT PLANS

In a DB plan, the employer promises a benefit that is a product of a worker's years of employment under the plan ("service") and some factor for each year of service. That factor either is a dollar credit (flat benefit plans), or a percentage credit that is applied to a wage or salary base (earnings-related plans).[1] Some earnings-related plans average all of a worker's wages or salary under the plan (career average plans); most specify a salary or wage base that uses the average sum earned by a worker in a period relatively close to his retirement or departure from plan (final average plans).

An employer who sponsors a DB plan is essentially making two commitments. The first is the narrow commitment to pay accrued benefits. These are the benefits that are legally owed workers at a given moment if a DB plan should be discontinued at that moment (or if the worker should move to another job not covered by the plan). Accrued benefits are based on a worker's years of service to the moment the plan is discontinued (or the worker leaves it) and on the wage base or flat dollar factor that then exists, as expressed in prices of that moment.

As noted earlier, plans may end because the sponsor is bankrupt or is nearly so. In addition, an economically healthy firm that is sponsoring a DB plan may voluntarily terminate it, provided that the plan contains enough assets to pay the covered workers their accrued benefits (usually as deferred annuities). A collective bargaining agreement, however, can prevent a plan sponsor from voluntarily terminating a plan during the life of the bargaining agreement.

The second implied commitment in a DB plan is to pay projected benefits. These are the benefits that will be owed to a worker at some future time when the worker eventually retires from the plan (or otherwise leaves it) at that time. In general, employers who are sponsoring DB plans are implicitly promising to continue those plans. For workers who intend to stay under a plan until, for example, retirement, this implicit promise presumably gives rise to expectations that extend beyond the accrued benefits of a particular moment. At the least, they expect their eventual benefits to reflect additional years of service. In addition, they expect the wage base or dollar factor used to determine past and future benefit accruals to be continually updated to reflect future wage growth. As a result, the initial value of retirement benefits for workers who stay with a firm until retirement will have been "updated" to keep up—to some degree—with their wages. (After retirement, however, the value of benefits will erode relative to subsequent wage growth and inflation. Some plans, however, provide ad hoc adjustments for inflation.)

In earnings-related plans, this process of updating is automatic. In final average plans, because benefits are based on a worker's most recent wages or salary, the updating is relatively strong. In career average plans, because earnings close to retirement are averaged with earlier earnings, the updating is relatively weak (although the benefits may still meet a target replacement rate through the benefit formula). In flat benefit plans, the dollar factor rarely is updated automatically for price changes; however, these plans usually are collectively bargained, and their dollar factors are periodically adjusted in contract negotiations. In practice, the updating in flat benefit plans has been relatively strong.

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[1] An example of a flat benefit plan formula is $10 per month for each year of service, yielding, for example, a benefit of $300 per month for a 30-year worker. In an earnings-related formula, the earnings base either is the worker's career average earnings under the plan or, more typically, earnings during a specified number of years close to the time when the worker retires or separates from the plan (for example, the average of the final 5 years under the plan). A typical percentage credit in such a scheme is 1 percent for each year of service, yielding, in the example of a 30-year worker, an annual benefit equal to 30 percent of the worker's earnings base.

Accounting standards require sponsors to present their liabilities for projected benefits in their financial statements. ERISA and the tax code require that employers who are sponsoring DB plans set aside funding in accord with one of six acceptable "actuarial" funding methods. In addition, the Financial Accounting Standards Board (FASB) recently required that the accounting books of corporations and other businesses reflect DB promises and liabilities in accord with a particular funding method (the so-called "projected unit credit" method). The formulas inherent in these methods anticipate various factors, including the investment returns that the funds will earn, projected wage increases, and the demographic characteristics of the workers that the plan covers.

The demographic characteristics include assumptions about how many workers will die or become disabled and, most important, when workers will leave the plan. Funds must be set aside not only to pay benefits to those who will retire from the plan and immediately receive payments ("immediate annuities"), but also to pay benefits to those who will leave the plan before retirement and are entitled to payments—after some gap in time—when they eventually reach the plan's retirement age ("deferred annuities"). In addition, funds must be set aside to pay deferred annuities to the surviving spouses of workers who die before reaching the plan's retirement age.

When investment returns, wage increases, and demographic experiences differ from those originally predicted, the sponsor must revise the assumptions in the plan's funding formula and make up for past deficiencies if they arise from earlier projections. By making these continual readjustments, DB sponsors absorb the investment risks (both good and bad) that otherwise—as in DC plans—would fall on the workers. To minimize the investment risks of plan sponsors, and to limit the exposure of the PBGC, ERISA contains provisions specifying the fiduciary responsibilities of plan sponsors and their agents. Among these provisions is one that generally prohibits the sponsoring employer from holding more than 10 percent of a plan's assets in its own stock or property.

Because the promise in a DB plan is expressed in terms of a retirement benefit, these plans usually distribute their payments as life, or as joint-and-survivor, annuities. Some DB plans will convert their annuities into equivalent (present value) lump-sum payments, especially when the value of a participant's accrued benefits is below $3,500.

### B. DEFINED CONTRIBUTION PLANS

Some DC plans are money purchase pensions in which the sponsoring firm makes fixed payments to each worker's account for each year of additional work. Like DB plans, money purchase pensions often make their payments as annuities. The largest private retirement plan is a money purchase plan—the Teachers Insurance and Annuity Association-College Retirement Equity Fund (TIAA-CREF) system—to which a great many universities, colleges and non-profit institutions subscribe.

Most DC plans, however, are profit-sharing plans in which sponsors retain more funding flexibility. In practice, contributions to the plans are often as automatic and fixed in size as contributions to money purchase plans. Though lump-sum distributions have been the norm in profit-sharing plans, annuities are being increasingly offered in these plans.

Many DC plans are structured as "Savings" plans, or they have savings plan components. In these plans, the workers may make deposits to their own accounts, usually with some employer matching. Where the workers' desposits are from after-tax income, these plans have been traditionally labelled as "thrift" or savings plans. A more recent variant is one in which the workers' deposits are made from before-tax income. These plans are called salary reduction plans, cash-or-deferred-arrangements (CODA) plans, or "401(k)" plans after the tax code section under which most of them are authorized. Many thrift and salary reduction plans are profit-sharing plans, although a few are money purchase plans.

In a DC plan, separate accounts are maintained for each worker, and the investment gains and losses of the plan's assets are posted to these accounts on a pro-rata basis. Thus, unlike a DB plan, workers covered by a DC plan can suffer investment losses. These losses can be particularly severe if they occur just before a worker had intended to retire. In these situations, individuals have either to work longer than they intended or to have a lower living standing in retirement than they had been planning. These investment risks, however, are smaller for plans that have broadly diversified assets.

However, though most of ERISA's fiduciary provisions apply to DC plans, the asset diversification requirement does not necessarily apply. Profit-sharing, thrift and salary reduction plans are exempt from the requirement that no more than 10 percent of plan assets can be held in employer stock or property. Though this requirement presumptively applies to money purchase plans, the presumption can be overcome if the plan is structured as an Employee Stock Ownership Plan (ESOP). The investment risks inherent in DC plans are the greatest in plans where assets are not diversified, especially if all the assets are in one company's stock.

### C. HOW INDIVIDUALS ARE COVERED

For the past decade or so, about one-half of the full-time labor force has been covered by some type of qualified plan. In the main, large plans and DB plans dominate the pension world. About one percent of DB plans account for about 74 percent of all participants and 70 percent of all assets. Plans that contain 100 or more participants account for only 6 percent of all plans, but they account for about 88 percent of all participants. Among the plans maintained by private employers with 100 or more participants, 60 percent are DB plans. Nearly all public employees covered by a plan are enrolled in a defined benefit plan. Conversely, though most plans are

DC plans, they amount to a relatively small fraction of total enrollment and benefit payments.

Increasingly, however, large employers are covering workers through a combination of a "base" DB plan and a "supplemental" DC plan, such as a profit-sharing plan, a salary reduction plan or an ESOP. If a small employer maintains a plan at all, it is more likely to be a DC plan, again typically a profit-sharing or savings plan.

### *1. Who Is Covered?*

The degree of coverage varies widely in different segments of the economy. For instance, at least four out of five workers are covered by an employer-sponsored retirement plan if they:

—work in a firm with 500 or more employees;
—are members of a union;
—have been on the job 10 or more years; or
—earn more than $25,000 a year.

### *2. Who Is Not Covered?*

At least seven out of 10 workers are likely not to be covered by an employer-sponsored retirement plan if they:

—work in a firm with fewer than 100 employees;
—have been on the job less than a year;
—work part-time (less than 1,000 hours a year); or
—earn less than $10,000 a year.

## D. RETIREMENT PLANS AND SMALL BUSINESS

If retirement plan coverage is to expand significantly in the private sector, it will have to be principally among small firms. Eighty percent of workers already are covered by an employer plan in firms with 500 or more employees, compared to only 32 percent in firms employing fewer than 100 workers. Moreover, future job growth is expected to be among small firms and in industries where pension coverage is relatively low.

Since the middle of the 1970s small businesses have accounted for about 80 percent of all new jobs and 80 percent of job losses. Seventy percent of the new jobs have been in firms with 20 or fewer employees.[2] However, the mortality rate among small firms contributes to the unlikelihood that they will adopt a retirement plan.

A 1980 survey by the American Society of Pension Actuaries shows that about half the small firms with retirement plans were in operation at least 5 years before the adoption of a pension plan.[3] However, Dun and Bradstreet data show that the percentage of businesses that fail within 5 years of operation has historically been above 50 percent.[4] These findings indicate that many small firms are unlikely to remain in business long enough to implement a retirement plan for their employees.

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[2] Remarks of David Birch before the National Commission on Small Business.

[3] Unpublished data. American Society of Pension Actuaries. Prepared for the President's Commission on Pension Policy, 1980.

[4] Dun and Bradstreet data do not cover all business discontinuances such as those with no losses to creditors, nor does it cover all business sectors (e.g., finance and insurance).

## III. THE EMPLOYMENT INCENTIVES OF PENSIONS AND PROFIT-SHARING PLANS

The earlier discussion of the history of pension plans in the United States showed why pension plans became very prevalent after World War II. It is now almost routine that a pension plan be part of the total compensation of a worker employed by a medium or large employer. An employer who does not have a pension plan is at a competitive disadvantage in attracting and retaining workers. Though, as discussed later, the tax motivations for pensions and other plans are important, employers and workers have economic reasons—independent of the tax advantages—why they may want a pension or similar plan as part of a firm's compensation structure.

### A. EMPLOYMENT INCENTIVES COMMON TO DEFINED BENEFIT AND MONEY PURCHASE PENSIONS

In the traditional pension plan, workers are assured that monies are being set aside each year for their retirement, that annuities from the plan will be calculated at favorable group rates, that the plan's assets are being invested in a broadly-diversified portfolio under professional management, and that their livelihood in old age is not dependent on the largesse and business acumen of past employers. By sponoring a plan, an employer largely satisfies the responsibilities that society may feel that employers owe workers after a certain age, and the employer does so in a way that correlates the costs with the employees' working lives. These basic attributes of a pension exist both in DB plans and in money purchase pension plans (except ESOPs).

### B. EMPLOYMENT INCENTIVES UNIQUE TO CERTAIN DEFINED CONTRIBUTION PLANS

Certain types of DC arrangements—profit-sharing plans, ESOPs, and thrift or salary reduction plans—lack, to a greater or lesser degree, the attributes of a full fledged pension; they, however, have other employment-related objectives.

Profit-sharing plans generally lack the certainty of fixed yearly funding. However, by tying workers' retirement income deposits to the firm's short and medium-term profitability, a profit-sharing plan may make workers more productive, and, thus, may allow the employer to provide more compensation through higher retirement income.

An ESOP is a profit-sharing or money purchase plan in which most of the plan's assets are invested in the sponsoring company's stock. These plans lack the protection against investment risk that diversified pension portfolios provide, and they may lack the certainty of fixed yearly funding. However, by tying the fate of workers' retirement benefits to the firm's long-term viability, ESOPs may prevent workers from exploiting temporary bargaining advantages and may induce them to focus instead on the firm's long-run economic position.

A thrift and salary reduction plan usually provides that the sponsoring employer will match the workers' contributions or income deferrals. At a relatively low cost to the employer, these matching incentives may cause workers to save more for their retirement in tax-favored accounts. Often these arrangements are supplements to a basic pension plan that the employer also sponsors and are particularly attractive to higher income workers.

### C. EMPLOYMENT INCENTIVES UNIQUE TO DEFINED BENEFIT PENSIONS

In a money purchase pension plan, a firm commits itself only to fixed annual contributions to its workers' accounts. Workers in these and other DC plans face the task of calculating the extent to which the payout from their accounts will replace their pre-retirement living standard. Although the investment risks of DC plans can be, and often are, minimized through portfolio diversification, workers in such plans bear the ultimate burden if the plan's investment experience is poor. In contrast, in a DB plan, the employer promises an employee a fixed retirement benefit. This commitment not only makes retirement calculations easier for workers, it also represents a long-term commitment by the sponsoring employer to whatever contributions are necessary to finance the promise, including any extra contributions if the plan's investment experience is poor.

As outlined earlier, an employer's present legal obligations to workers in a DB plan are based only on the workers' current earnings. If the sponsoring firm should fail, if the sponsor discontinues the plan, or if the worker changes jobs before retirement, inflation will erode the value of the benefits before they are first payable. Similarly, the value of the DB promise to any particular employee depends on how long the employee is planning to stay with the firm and how close he is to the plan's normal retirement age. A worker who leaves a DB plan in the early or middle years of his working life will suffer a loss in benefits, even though he is vested. Again, this is because his benefits are based on a salary that, because of inflation, erodes in value between the time he leaves the plan and the first time benefits are payable. However, because most workers can expect to change jobs during their careers, they may take this contingency into account.

While DB plans have been used by medium and large employers as the traditional way of providing retirement income to their long-service employees, some employers may use them to recapture training costs, to encourage employees to stay on their jobs during their prime productivity years, and to encourage older workers to leave before their productivity begins to decline. In theory, a DB plan provides these employment incentives.

—The value and cost of accrued benefits in the first years of an employee's tenure under a DB plan are quite small. Accordingly, an employer with a DB plan can offset high training costs for new employees with relatively low pension contributions for them (compared to what the employer would contribute in a DC plan).

—In a DB plan, long service workers during the peak productivity years of their 40s and 50s will incur substantial losses in potential retirement income if they switch jobs. If workers in these situations find it difficult to compensate for the potential losses in retirement income through higher compensation in subsequent jobs, they will be less likely to move in their prime years.

—Some DB plans pay relatively high benefits to workers after they have satisfied a combination of age and service, such as age 55 and 30 years. In addition, these early retirement benefits are not always actuarially reduced to reflect the longer pay-out. Accordingly, these employees are encouraged to leave at ages when the employee predicts their productivity will decline.

## IV. TAX MOTIVATIONS FOR PENSIONS

Besides providing income to replace earnings upon retirement, the reasons pensions and profit-sharing plans exist also can be found in their tax advantages. Individuals are given tax incentives to save for retirement. They are permitted to postpone income tax on current compensation set aside for retirement, including investment earnings on those savings. Under qualified plans, income tax is generally postponed until the time benefits are paid, even though the benefits (if funded and nonforfeitable) would otherwise be considered constructively received or equivalent to cash. Employers are allowed to deduct (within limits) their contributions made to fund retirement benefits.

Although large employers may not be motivated by tax advantages when establishing a retirement plan, small employers respond more directly to the tax incentives inherent in qualified plans because they may also be the chief beneficiaries of the plan. For most workers—especially higher salaried employees—participation in a tax-qualified pension or profit-sharing plan is the best way to accumulate retirement income. In these plans, savings for retirement can accumulate at a before-tax rate of return; in contrast, personal savings normally can accumulate only at an after-tax rate of return. In addition, qualified plans allow workers to shift the taxation of some of their compensation from relatively high marginal tax brackets in their working years to relatively lower tax brackets in their retirement years.[5]

### A. SAVING INCENTIVES

As was discussed in earlier chapters, the evidence does not clearly indicate that the tax advantages for qualified plans have caused individuals to save more—that is, to defer greater amounts of current consumption—than they would have anyway. By the same token, the evidence does not indicate that the tax advantages have caused individuals to save any less. Rather, the tax advantages seem to have simply generated more retirement income for individuals on the savings that they probably would have put aside in any event.

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[5] In an income tax, savings are allowed to accumulate only at an after-tax rate of return. Investment income from rents, royalties, interest, and dividends normally is taxed annually. Though asset appreciation is not taxed annually, investment income and the sale of property, especially stocks and bonds, is taxed each time property is sold. In contrast, investment returns in a qualified plan, whether as annual income or capital gains, are allowed to compound tax-free. Equally important, at the time of payout from a qualified plan, the investment accumulations attributable to employer contributions are taxed away only in the same proportion as those contributions are taxed. As a result, a worker retains the investment income or capital that the net contributions have earned. In other words, these retirement savings have been allowed to accumulate at a before-tax rate of return. (The investment income earned by after-tax contributions to a qualified plan, however, is taxed, although only once on a deferred basis, at the time of distribution.)

In addition, if, as often happens, the worker's tax rate at the time of payment is lower than was his rate at the time of deposit, he retains both a larger amount of the contributions and a larger amount of the associated tax-deferred investment income. In general, this allows workers to shift the taxation of some of the present value of their compensation from high marginal tax brackets in their working years to lower tax brackets in their retirement years.

While it is not clear what effect tax advantages have had on personal saving rates, studies have found that pensions add to the wealth of participating employees. Recent estimates are that the total wealth of older workers may increase by 30 cents to 40 cents for each dollar of their pension wealth. Though pensions may not cause people to save more, the Congressional Budget Office (CBO) concludes that their higher retirement wealth represents greater national saving unless the revenue loss from the tax advantages has been financed by greater Federal borrowing or offsetting taxes on capital income.[6]

### B. PARTICIPATION INCENTIVES

Because the tax advantages do yield larger amounts of retirement income, many individuals want to place a relatively large amount of their retirement savings into qualified plans. Thus, many want to bargain for qualified plans as part of their overall compensation. Accordingly, in some settings, employers find it necessary to sponsor pensions to attract and retain workers for whom tax-advantaged retirement savings are an important consideration. This phenomenon probably reflects itself mostly in the formation of discretionary salary reduction arrangements such as 401(k) plans, rather than in the creation of DB plans.

In addition, employers and the management of firms may decide that establishing a qualified plan is the best way for them to save for their own retirement. (Some small business owners, on the other hand, may decide that it is preferable to plow back their savings into their firms and increase their potential retirement wealth by that means.) In order to prevent key decisionmakers from creating tax-advantaged vehicles solely for their own ends, the tax code contains requirements that plans must cover a large percentage of a firm's labor force, and places dollar limits on the amounts that can be contributed to a DC plan or the benefits that can be paid by a DB plan. These rules also require that, except for some permissible integration with social security, a plan's contributions or benefit accruals must be proportional across a firm's earnings distribution.

## V. EQUITY CONSIDERATIONS

Only about one-half of the workforce is covered by a qualified plan at any moment. Yet all taxpayers indirectly bear the cost for the tax advantages allowed qualified plans through higher taxes on other income and savings, reduced spending on public programs, and/or increased borrowing to finance government debt. Because of the structure of DB plan formulas, the benefits are largely concentrated among those who have had most of their work lives under one employer plan. In assessing the equities of this concentration, it is useful to distinguish between the component of a worker's benefit that would exist even if the plan were not tax-advantaged (which may be thought of as the "underlying benefits"), and the component that exists because of the tax-advantages (i.e., the "tax-induced gains" in retirement income). As discussed before, these tax-induced gains occur because individuals in qualified plans are able to earn a before-tax rate of return on their retirement savings that is higher than the after-tax return would be on the same amount of deferred consumption.[7]

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[6] Tax Policy for Pensions and Other Retirement Savings. Congressional Budget Office, Apr. 1987.

Though most workers will be covered by a retirement plan for some period over their work lives, the length and depth of any one worker's lifetime coverage will depend on his or her individual work history. In turn, the value of the retirement benefits earned will be commensurate with the time spent under the plan. Thus, the longer one works with the same employer, the greater the value of the underlying benefits. This also holds true for the value of the tax-induced gains. The CBO estimates that these gains may be leading to retirement incomes for today's workers that are roughly 15–25 percent more than their retirement incomes would otherwise be.[8] However, the estimated gains are mostly among those who are projected to be under one plan for at least twenty years; their eventual increases in retirement income from the tax advantages are estimated in the 20 to 30 percent range. In contrast, those projected to never obtain twenty or more years under one plan are estimated to eventually have increases in retirement income from the tax advantages only in the five to thirteen percent range. Moreover, in the aggregate, the projected tax-induced gains are heavily concentrated in the upper-half of the income distribution. That result, however, tracks the concentration in lifetime earnings on which the underlying benefits are based and reflects the higher tax rates to which higher-income workers are subject. By definition, any tax advantage is more valuable to those facing higher tax rates. These upper-income individuals also are sustaining offsetting losses in their rates of return in social security.

## VI. Looking Into the Future

Pension receipt among recently retired workers was greater in the early 1980s than it was a decade earlier. Moreover, pension receipt is expected to be still greater in the future as a result of a growing economy and a maturing pension system. Still, a number of issues will affect the future of private pension plans and their role in providing retirement income to baby-boom and other retirees. These are related to the aging of America, changes related to workforce characteristics and the economy, and the regulatory role of the Federal Government.

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[7] It should be noted that these issues are relevant also to public sector plans (i.e., Federal, State and local government). For example, the new Federal Employees Retirement System (FERS) is modeled after typical private sector practices.

[8] Tax Policy for Pensions and Other Retirement Savings. Congressional Budget Office, April, 1987.

### A. PROJECTIONS OF RETIREMENT INCOME AND ADEQUACY CONCERNS

The CBO projected the retirement incomes of today's workers in the year 2019. This study suggests that, for most of the baby-boom elderly, retirement incomes will be well above the incomes of today's elderly and will be more than adequate, when measured by poverty or some similar absolute standard.

Retirement incomes, after taxes, are projected as being—in 1984 dollars—nearly $16,000 for fully retired couples in the lowest quartile to over $52,000 for such couples in the highest quartile. Among singles at higher income levels, the projections indicate average after-tax incomes around $14,000 (third quartile) and $29,000 (fourth quartile). Average incomes for singles at lower income levels, however, are projected as relatively low. In the main, this is the result of limited work histories. The projections suggest that poverty rates will remain high among singles in the bottom quartile, and that circumstances will be only marginally better for singles in the next higher quartile.

Social security is projected to remain the primary source of retirement income. For those in the bottom half of the retired population, some 60 percent to 70 percent of their income will be from social security. Even for those in the upper half, about one-third will come from social security.

Pensions and other qualified plans are projected as an important source of retirement income. For those in the upper half of the retired population, pension and other plan benefits are projected as 30 percent to 40 percent of their total income. For those in the bottom half, pension income is projected as less significant, at most 20 percent among fully retired couples.

These relatively large pension figures reflect the steady maturation of the pension system. Even though qualified plan coverage may not be growing, workers are spending longer periods of their work lives covered by a qualified plan in a post-ERISA environment (i.e., early vesting, participation requirements, break-in-service rules, etc.). As a result, each cohort of retirees begins retirement with larger amounts of pension accruals than did the previous cohort.

Savings that are now going into qualified plans probably would be saved for retirement even if there were no such plans. Thus, much of this projected pension income represents asset income that people would be receiving anyway. On the other hand, however, distributions from qualified plans add to retirement income because of the tax advantages that qualified plans enjoy.

### B. CURRENT AND PREDICTED DISTRIBUTION OF BENEFITS

The Employee Benefit Research Institute (EBRI) has also made some preliminary assessments of income among future retirees. EBRI assumes that the rate of pension coverage will not change over the 40-year simulation period. Nonetheless, future elderly were found to be more likely to have employer-provided pension assets at retirement than today's retirees. In part, this trend is explained by the longer opportunity young workers have to participate in retirement plans subject to ERISA minimum standards, compared to workers now retiring. However, most of the growth is attributable to the greater opportunity of young workers to vest (acquire a nonforfeitable right to a pension) in several DC plans. These plans tend to have faster vesting periods than DB plans.

Among married workers now retiring, EBRI estimates that 48 percent have pension income, compared to a 63 percent prediction for future retirees now in the age 25–34 cohort. Table 9.1 shows the expected future receipt of pension and other forms of retirement income, by 1979 age cohorts.

TABLE 9.1.—PERCENT OF FUTURE NEW RETIREE FAMILIES WITH RETIREMENT INCOME FROM VARIOUS SOURCES

| Income source | 25 to 34 [1] | 35 to 44 [1] | 45 to 54 [1] | 55 to 64 [1] |
|---|---|---|---|---|
| Social Security | 96 | 93 | 90 | 86 |
| Pensions | 63 | 61 | 57 | 48 |
| Earnings | 29 | 37 | 35 | 35 |
| Individual retirement account savings [IRA's] | 41 | 37 | 24 | 3 |
| Supplemental security income [SSI] | 3 | 6 | 8 | 11 |

[1] Age of each group in 1979.

Source: Employee Benefit Research Institute. Preliminary results from the Pension and Retirement Income Simulation Model [PRISM], 1986.

Besides an expected increase in pension receipt, the average amount of pension income among retired married couples with pensions is projected to rise more than 83 percent—from $7,100 among couples retiring today to $13,000 (in 1985 dollars) for those retiring during 2004–2013. Among single retirees, average pension income is projected to rise by 70 percent, from about $5,300 among single workers now retiring, to $9,000 for the youngest cohort when they retire.[9] While pension recipiency and amounts are expected to increase assuming a growing economy, the Overview section of this report points outs that pension benefits may comprise roughly the same overall share of retirement income for baby boom retirees as it does for today's retirees.

While it is expected that pension coverage will not increase in the future, there will be a significant shift in the source of pension income. Even before the 1986 tax law there was evidence that the prevalence of defined benefit (DB) plans was declining. As shown later, passage of the 1986 law may accelerate the trend. The total receiving pension plan income will probably eventually increase to two-thirds of the families, but the growth will come mainly from DC plans.

Recent analysis by the EBRI indicates that as a result of the 1986 Tax Reform Act, pension recipiency for baby-boom retirees (those age 30 to 39 in 1985) is likely to increase. The shorter time required for vesting and new tax penalties and changes designed to discourage pre-retirement consumption of lump sum distributions are expected to increase the share of older persons receiving pensions in the future. The following table shows estimated future pension recipiency at age 67 for baby-boom retirees before and after tax reform by type of benefit and marital status. Nearly 74 percent of married men and nearly 56 percent of married women are expected to receive retirement benefits under either a DB plan, a DC plan, or both. Unmarried retirees also are expected to make sizeable gains in pension receipt.

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[9] Chollet, Deborah. America in Transition: Benefits for the Future. Employee Benefit Research Institute, 1987.

TABLE 9.2.—FUTURE PENSION RECIPIENCY AT AGE 67 AMONG THE BABY BOOM (AGE 30 TO 39 IN 1985) BEFORE AND AFTER TAX REFORM BY TYPE OF BENEFIT AND MARITAL STATUS

[In percent]

| Type of benefit | Married men | | Unmarried men | |
|---|---|---|---|---|
| | Before reform | After reform | Before reform | After reform |
| Defined benefit (DB) plan only | 34.3 | 32.0 | 36.3 | 33.0 |
| Defined contribution (DC) plan only | 12.7 | 15.0 | 10.5 | 11.5 |
| Both DB and DC plans | 22.5 | 26.7 | 16.6 | 24.6 |
| Total recipiency | 69.4 | 73.8 | 63.4 | 69.1 |

| Type of benefit | Married women | | Unmarried women | |
|---|---|---|---|---|
| | Before reform | After reform | Before reform | After reform |
| Defined benefit (DB) plan only | 24.4 | 25.2 | 21.7 | 24.1 |
| Defined contribution (DC) plan only | 10.6 | 16.8 | 11.5 | 16.8 |
| Both DB and DC plans | 7.9 | 13.7 | 10.5 | 14.0 |
| Total recipiency | 42.7 | 55.7 | 43.7 | 54.9 |

Source: Employee Benefit Research Institute tabulations from the Pension and Retirement Income Simulation Model (PRISM) (EBRI, 1986)

The EBRI analysis also shows that total average income from public and private employer-sponsored pension plans will increase for men in the baby boom (age 30–39 and 1985) as a result of tax reform from $13,900 to $15,400 (in constant 1985 dollars)—about an 11 percent gain. Similar gains are expected for unmarried men. Married women are only expected to have a 3 percent gain as a result of tax reform—from $3,600 to $3,700. (The EBRI simulations show an unexplained decrease in the average amount of pension income received by unmarried women from $6,000 to $5,700.)

EBRI estimates that the effect of tax reform on the average dollar amount of benefits received will differ considerably depending on whether the retirement income comes from a DB plan or a DC plan. Average pension amounts from DB plans may decrease in many cases because of the new 5 year vesting requirement which will result in increased recipiency, but with benefits based on fewer years service. Benefits from DC plans are expected to increase as a result of the elimination of the favorable tax treatment accorded lump-sum distributions and the 10 percent additional tax levied on early distributions (before age 59½). Thus, cash-outs are more likely to be saved for retirement income.

In a report based on the same retirement income simulation model, ICF Incorporated also estimated the potential impact of the Tax Reform Act of 1986 on retirement incomes and employer costs.[10] The simulations indicated that the number of retirees in 2011-2020 receiving pensions will increase as a result of tax reform, but that the number of people with IRAs will decrease. This reduction reflects new limitations on IRA contributions by workers covered by a pension plan. ICF notes that these simulations are based upon a number of economic assumptions that have a potentially large impact on the results. For example, if the economy does not grow as quickly as assumed, the average level of pension benefits will decline.

## C. PENSIONS AND THE AGING OF THE POPULATION

At first sight, the aging of the population would not seem to have the same effect on the private pension system as on social security. Legal and accounting requirements for DB plans assume that DB contributions paid into the pension trust fund during the working life of employees equal the present value of benefits earned by them. During retirement, the retirees will draw down on the pension fund and, on average, the funds set aside will be sufficient to pay the promised benefits to those employees. Since all the benefits are funded in advance, the ratio of retirees to workers is less important than it is in social security. However, this does not mean that there is nothing to be concerned about.

The ratio of retirees to workers in the overall economy could affect the relative supply of and demand for financial assets. This in turn could affect the price of the financial assets backing up retiree claims. These claims must be paid for by subsequent generations of workers. If the value of the pension assets drops, employers may have to increase their future contributions to the plan. However, given the periodic actuarial valuations and the legal and accounting funding requirements, aggregate pension funding would tend to adjust automatically to these market changes.

Another reason why the effects of the aging of the population likely will be smaller for defined benefit pension plans than for social security is that few DB plans are automatically indexed after retirement. Ad hoc increases are typically one-fourth to one-half of inflation, but these are not pre-funded and are paid at the option of the employer. If funding were to become insufficient in the future, companies might cease providing the ad hoc increases. The result could be a hidden, but very significant, loss in income to retirees. In contrast, changing the way social security provides inflation protection would be a very visible and controversial departure from public policy.

### *1. Pension Accruals for Older Workers*

One obvious response to the prospect of unprecedented numbers of retirees as the baby-boom ages is to implement policies to keep older workers in the labor force by making continued employment more attractive or possible. Three recent changes in the law are in tune with this goal. First, beginning in 1987, most workers cannot be forced to retire when they reach age 70. They can continue to work as long as they are able, with no mandatory retirement age. Second, beginning in 1988, pension plans are required to give additional pension credit or to increase benefits for participants who work beyond normal retirement age.[11] In the past, the lack of pension accruals has caused a loss in total potential benefits paid out to some older workers. Not only were pensions frozen at age 65, no additional credit or adjustments were made to reflect delayed retirement.[12] Third, the Tax Reform Act of 1986 requires actuarial reductions to the maximum benefits that may be paid from qualified plans at early retirement. This will generally affect only higher-paid employees, but it may discourage their early retirement.

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[10] Kennell, David L. and John F. Shiels. The Potential Impact of the Tax Reform Act of 1986 on Retirement Incomes and Employer Costs. ICF Incorporated, Jan. 1987.

Even though over half of large and medium size firms already provide some adjustment for service after the plan's normal retirement age, relatively few elderly in the overall economy have chosen so far to work after age 65, and this proportion has been steadily declining. In 1983, only 11.5 percent of those age 65 and older reported that they were in the labor force, compared to 16.6 percent in 1970. Experience to date suggests that these new incentives for delaying retirement may have little effect on the demographics of the working population.

### *2. Pensions and Increased Life Expectancies*

Chapter 2 of the background papers points out that the time a person spends in retirement will continue to increase as life expectancies increase. Mortality improvements will lead to payment of retirement benefits over longer periods of time unless retirement ages are increased substantially.

In the 20 years from 1960 to 1980, combined life expectancy for men and women at age 65 increased nearly 14 percent—from 14.4 years to 16.4 years. These trends are expected to continue. For example, under the Census Bureau's low mortality assumption (which shows higher levels of life expectancy), female life expectancy at age 65 would increase by about 51 percent between 1980 and 2060, while for males the increase would be about 43 percent. If this trend proves correct, by 2060 women age 65 could expect to live another 27.6 years, and men another 20.2 years.

In the case of DB plans, longer life expectancies will require increased employer contributions. However, employer costs for DC plans would not be affected by mortality improvements. This is because annuities purchased with a given amount of funds accumulated in DC plans will be lowered as increased life expectancies are reflected in the cost of the benefit provided by the insurance company.

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[11] Defined under ERISA as no later than (a) age 65 or (b) 10 years after participation in the plan commenced.

[12] According to the EBRI, depending on a pension plan's provisions, an employee delaying retirement just 2 years could lose from 4 to 23 percent of the value of accrued lifetime benefits, while an employee delaying retirement for up to 5 years could lose up to half the lifetime value of benefits accrued at age 65. (EBRI Issue Brief No. 35, Oct. 1984).

As noted earlier, the age for full retirement benefits under social security will increase from age 65 to age 67 during the first quarter of the next century. Moveover, the Tax Reform Act of 1986 requires that the normal retirement age under pension plans be the same as the age for full benefits under Social Security. (The term "normal retirement age" has become a technicality that has little relationship to the actual age at which full benefits are first paid.) Employers have not yet begun to deal with this change but will have to do so by the year 2000 to avoid increased pension costs, especially for plans that integrate their benefits with social security under the "offset" method.[13]

Another cost consideration related to increased longevity is the extent to which post-retirement adjustments are made to pension benefits. Over time inflation reduces pension purchasing power. A fixed benefit (i.e., a DB or an annuity purchased with funds accumulated in a DC plan) will lose about half its value in 28 years at an annual inflation rate of 4 percent.

Since the baby boom is expected to have a greater number of years in retirement, the inflation protection of pensions and annuities takes on greater importance. However, the cost of indexing benefits to the rate of inflation can be high. Under the moderate set of economic assumptions used in the Social Security program, an inflation rate of 4 percent and annual increases equal to inflation would increase the cost of a typical pension plan by about 50 percent. While private-sector DB plan benefits have not tended to be fully indexed for inflation, some feel that other types of retirement savings can be used to insure against that type of risk. For example, supplemental DC plans could be used as an inflation hedge, as could individual savings.

## D. CHANGES RELATED TO WORKFORCE CHARACTERISTICS

A number of factors independent of the aging of America will affect pension coverage rates and costs and the level of benefits and their distribution. They may even influence the way employers provide retirement benefits. These relate to changes in the workforce and the economy, the new tax rates, and employer response to the regulatory framework governing retirement plans. This section discusses the increasing participation rate of women in the workforce, the decline in union membership, and the effect of job mobility on the receipt and amount of benefits.

### *1. Participation of Women in the Labor Force*

The labor force participation rate of women has been steadily growing for the last 40 years. The continuing increase reflects changes in marital status, educational attainment, fertility, and rising career aspirations. Participation among women ages 25 to 44 is expected to exceed 80 percent in 1995, up from 70 percent in 1984 and 50 percent in 1970.[14]

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[13] Retirement plans have been designed explicitly or implicitly to coordinate or "integrate" their benefit formulas with social security. Most employers with integrated plans pay benefits that are directly offset by a portion of social security. A typical plan will offset, or subtract, 50 percent of a career worker's social security benefit from the pension accured under the plan. This integration technique counteracts social security's practice of replacing a higher percentage of final earnings for a lower-paid worker than it does for a higher-paid worker.

While women have made significant gains in pension coverage and benefit entitlement over the last 10 years, they still are less likely to be covered by a pension plan than men, and when they are, they tend to receive lower benefits. This will continue as long as women work in jobs not covered by a pension plan and receive relatively lower wages than men. Among full-time employees, 51 percent of men and 41 percent of women participated in a pension plan in 1982. The higher coverage rate for men results from a combination of factors. Male workers, on average, tend to be older and have longer tenure than female workers. They are also more likely to be represented by a union, to be employed by large-sized firms, and to work in higher income industries and occupations. All of these factors are associated with higher pension coverage rates.[15]

The rise in the labor force participation rate of women has increased the number of persons covered by pension plans. This trend will continue as the labor force participation of women continues to increase through the rest of this century.

### *2. Decline in Union Membership*

The rapid growth in DB pension plans during the 50s and the 60s was partly the result of collective bargaining. Even though employees in collective bargaining units make up only 21 percent of full-time workers, they accounted for over one-third of all pension plan participants in 1982. Union membership is associated with very high pension coverage rates even in smaller firms. Overall, 77 percent of all bargaining unit employees are covered by a plan, compared to only 40 percent of non-bargaining unit employees.[16]

Unions have strongly supported DB plans in preference to DC plans. However, the percentage of union members in the work force has declined from 25 percent in 1970, to 16 percent in 1984. It is not clear whether this trend will continue. Union membership trends have fluctuated in the past.[17] A further decline in union membership may tend to lower pension plan participation in general, and DB participation in particular.

### *3. Pensions and Job Mobility*

Whether job mobility has been increasing or decreasing over time cannot be measured because current surveys on job tenure are not fully comparable with previous ones. However, a large proportion of American workers are thought to spend most of their "mature" worklife with the same employer and in the same type of work. Of course, there is significant job movement among young workers, both in terms of employers and types of work. Still, once they settle into a career path, employees become considerably more stable in terms of their work.[18]

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[14] Fullerton, Howard N. The 1996 Labor Force: BLS' Latest Projections. Monthly Labor Review, Nov. 1985.

[15] U.S. Department of Labor. Handbook of Pension Statistics, 1985.

[16] Handbook of Pension Statistics, 1985. p. 90.

[17] U.S. Library of Congress. Congressional Research Service. Union Membership Trends: The Implications for Economic Policy and Labor Legislation. Report No. 86-197 E, by Richard S. Belous. Washington, May 29, 1986.

As mentioned earlier, the current design of DB plans is not desirable for those workers who change jobs often or for people who spend only part of their careers in the workforce. In the past these persons often forfeited accrued benefits because they did not stay on the job long enough to vest. This problem has been reduced by the 1986 Tax Reform Act. Beginning in 1989, pension benefits must either vest after 5 years of service, or be 20 percent vested (20 percent of accrued benefits) after 3 years of service and rise to 100 percent by gradual increases after 7 years. This change will also help those who would have otherwise failed to vest in some DC plans.

It is expected that most employers will adopt 5-year vesting, but a benefit based on a short period of service early in one's career is not likely to be worth much.[19] Because of the administrative costs of providing small benefits, employers with DB plans probably will continue to "cash out" small future benefits by providing the separating employee with a lump-sum in cash. (The lump-sum represents the present value of the future "deferred annuity" to which the separating employee is entitled.) If these lump-sum amounts are not rolled over into an IRA or otherwise saved, they may not be available for retirement income.

Studies show that workers usually consume lump-sum cashouts they receive from retirement plans upon changing jobs.[20] This can substantially reduce the amount of income they have in retirement. The Tax Reform Act of 1986 attempts to discourage this preretirement consumption by repealing provisions in the tax code (i.e., capital gains treatment and 10-year forward income averaging) that minimize the tax impact on recipients and with certain exceptions, adding a 10 percent additional tax on amounts distributed before age 59½, unless paid out in the form of an annuity.

Even if preretirement distributions are saved for retirement purposes, their value may fall short of what it would have been if the funds remained in the employer plan. Simulations by EBRI show that the value of retirement income benefits could be reduced substantially through poor investment performance. Even if cashed-out benefits from a DB plan were reinvested by the participant at an interest rate of 1 percentage point higher than that of the plan, it would not significantly increase the value of future benefits. This is because the value of the future benefits may be reduced to take into account probability of the participant's death before retirement age. (Under current law, the cost of providing a preretirement survivor annuity to a plan participant who dies before reaching retirement age may be passed on to the participant through reduced benefits or increased contributions).[21]

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[18] Sehgal, Ellen. Occupational Mobility and Job Tenure in 1983. Monthly Labor Review, Oct. 1984. (See also Hall, Robert E. The Importance of Lifetime Jobs in the U.S. Economy. American Economic Review, Sept. 1982.)

[19] For instance, if an employee were to work for one employer from age 21 through age 25 and then join a second employer from age 26 through 65, the benefit from the first employer would be worth only one-hundredth of the benefit from the second employer if each had identical pay-related plans.

[20] Atkins, G. Lawrence. Spend It or Save It? Pension Lump-Sum Distributions and Tax Reform. An EBRI-ERF Research Report. Employee Benefit Research Institute, 1986.

[21] Pension Portability and What it Can Do for Retirement Income: A Simulation Approach. EBRI Issue Brief, no. 65, Apr. 1987.

Even employees who change jobs after longer periods of service may find that their DB pensions have lost significant value by the time they reach retirement. Mobile workers are particularly affected by pre-retirement inflation. Changes in pension plan coverage and vesting brought on by the 1986 Tax Reform Act will not alter this outcome. For example, an employee who works 10 years for each of four different employers would have total pension benefits that are about half as large as the single benefit of a person who stays with the same firm throughout a 40-year career, even if all employers provide identical DB plans. (DC plans are not affected by job mobility since the account balance is furnished on separation of employment and can be rolled over into an IRA, where it can continue to earn interest on a tax-deferred basis.)

### E. CHANGES RELATED TO THE ECONOMY

Changes related to the economy will continue to influence pension plan cost, coverage, the level of benefits, and the types of plans employers offer. For instance, business cycles affect the level and prevalence of both DB and DC plans. Inflation affects the purchasing power of retirement benefits. Investment returns affect the cost of funding DB pension plans and the value of DC plans.

#### *1. Pension Benefit Guaranty Corporation*

Changes related to the economy have a direct impact on the PBGC. In turn, the financial status of the PBGC is an important factor in the dependability of DB promises.

The PBGC took a number of "big hits" in 1982, 1983, and again in 1985, raising its deficit alarmingly to the billion-dollar mark. The program for insuring single-employer pension plans was revised in 1986 to put the Corporation on a more sound financial footing. The Single-Employer Pension Plan Amendments Act closed off what were viewed as program "loopholes" that had permitted employers to terminate their plans deliberately and shift financial responsibility for pension liabilities on to the PBGC insurance system. The legislation (1) more than tripled the annual per capita insurance premium paid by DB plans from $2.60 to $8.50, (2) increased plan liability to both the PBGC and plan participants, and (3) placed strict limitations on the ability of a plan sponsor to end a pension plan. A company can now end an insufficiently funded plan if the company has serious financial problems under what is called a "distress termination." This is defined as either (1) being involved in bankruptcy or insolvency proceedings, (2) undergoing reorganization, (3) being unable to pay debts unless the plan is ended, or (4) having increasingly burdensome pension costs because of a shrinking work force. The PBGC may also step in and terminate a plan if it determines there is a reasonable expectation that its long-run loss will substantially increase if the plan continues.

Notwithstanding the 1986 amendments, a number of complex issues confront the PBGC and directly affect the solvency of the Corporation. For the fiscal year ending September 30, 1986, the PBGC's deficit (i.e., its liability to pay benefits in excess of its assets) from the single-employer pension plan termination insurance program equaled $3.8 billion, nearly three times its deficit at the end of the 1985 fiscal year. During fiscal year 1986, the PBGC's liabilities doubled, while its assets grew only 50 percent. Nearly 80 percent of its deficit is attributable to plan terminations in the steel industry. Of additional concern are falterings of other steel companies with substantial underfunded pension liabilities and the vulnerability of firms in other industries that may experience business decline.

Although ERISA funding standards have been in place for over a decade, a number of plans are underfunded. If these plans were to end, it could substantially increase the PBGC's current deficit. The General Accounting Office (GAO) found that 3,351 of the 14,581 plans they examined were underfunded by about $21 billion.[22] In another study, the GAO found that most of the claims during 1983-85 that they examined would not have been prevented by the 1986 amendments because the plans were ended by financially distressed employers.[23]

The PBGC is currently paying out more in benefits than it receives in premium income and earnings on its assets. Under current PBGC forecasts, all funds available to pay guaranteed benefits will be depleted by the year 2003. This depletion date, however, could be accelerated in the event of another large recession. The recession would decrease PBGC premium income, and it might lead to more bankruptcies and pension funding defaults.

### *2. Excess Pension Assets*

While certain sectors of the economy pose a threat to the PBGC, national surveys show that most pension plans have sufficient assets to meet obligations if they were to end today. This is primarily because investment performance has exceeded anticipated results. The GAO found that 70 percent of the 14,581 plans they examined were overfunded by a total of $57 billion.[24]

Pension plan participants and retirees are concerned about the practice of plan sponsors to recapture "excess" pension assets. This has raised public policy questions: Against what measures should "excess" assets be defined? What are the comparative claims of sponsors and participants to any reversions, however, measured?

GAO reported that during the 6½ year period between January 1980 and June 1986, companies ended about 1,200 plans with "excess" assets (covering more than 1.4 million participants) and recaptured about $14 billion. Under current law, a company can obtain such excess assets only by ending the plan and satisfying all obligations of the plan to participants and retirees.

Some employers terminate their pension plan in order to use the excess funds for non-pension purposes, such as alleviating adverse business conditions or retiring long-term debt. Although most of these companies usually establish a successor plan, albeit with a smaller financial cushion, it is not clear what the long-term repercussions will be on the PBGC. Under current law there is an incentive for some employers to maintain multiple plans funded at different levels in order to maximize their access to tax-favored plan assets. It is asserted that some employers have obtained assets by terminating their overfunded plans and then have terminated their underfunded plans, in some cases, shifting the unfunded liabilities to the PBGC.

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[22] U.S. General Accounting Office. Pensions: Plans With Unfunded Benefits. GAO/HRD-87-15-BR, Oct. 1986. Washington, 1986.

[23] U.S. General Accounting Office. Pension Plans: Government Insurance Program Threatened by its Growing Deficit. GAO/HRD-87-42, Mar. 1987. Washington, 1987.

[24] U.S. General Accounting Office. Pension Plans: Plans with Excess Assets. GAO/HRD-86-100BR, May 30, 1986. Washington, 1986.

Another concern caused by the practice of ending plans to acquire excess assets is the effect on retirees. Annuities that employers buy from insurance companies to discharge their pension obligation generally have no cost-of-living provision, and retirees thus lose out an any future inflation adjustments the employer may have provided if the plan continued.

Although many view the pension assets as deferred wages belonging to participants and beneficiaries of the plan, Federal law and regulations generally hold that the employer owns any excess assets left after satisfying all DB plan liabilities. In general, this view has traditionally prevailed because the employer must make up the investment losses when pension fund assets fall below funding targets. It, therefore, is argued that he should be entitled to any surpluses.

It remains to be seen if there will be a significant reduction in pension coverage or benefit levels as a result of this practice or if the imposition of the 10 percent excise tax in the 1986 Tax Reform Act, coupled with more realistic actuarial assumptions, will greatly reduce the number of asset reversions.

### *3. Changes Related to Interest Rates*

The financial position of a DB plan is extremely sensitive to both current and long-term interest rates. In determining whether a plan is overfunded or underfunded, the present value of the future stream of benefit payments must be measured against the assets on hand. The present value of these future liabilities is a function of the rate of interest at which the payments are discounted. The higher the interest rate assumption, the smaller is the present value of the pension liabilities. It can be generalized that a change (upward or downward) of 1 percent in the interest rate assumption (e.g., from 5 to 6 percent) alters plan costs by about 25 percent.

Current interest rates also affect the prices quoted by insurance companies in providing retirement annuities. If current interest rates are higher than the rate assumed by the plan, the company can purchase annuities discharging all pension benefits earned to date at a lower cost than the liabilities determined by the plan's actuary. This in turn increases the amount of any excess assets.[25]

The sensitivity of pension plans to changes in interest rates is dramatically shown by how much the funding status of the United Airlines pension plan changed over 1 year. In June 1985, the company announced its intention to recapture $962 million from its pension plan. By the time the reversion took place 1 year later, the sum amounted to only about $160 million because interest rates had fallen so sharply, shrinking the amount of excess assets.[26]

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[25] Grubbs, Donald S. Termination of Pension Plans With Asset Reversion: A Solution. Journal of Pension Planning and Compliance, June 1984.

### F. TAX AND REGULATORY ENVIRONMENT

The tax and regulatory environment will continue to influence retirement plans offered by employers and the role these plans play in providing future retirement income.

#### *1. Effects of New Tax Rates*

The CBO concludes that the new simplified tax rate structure with its two broad brackets of 15 percent and 28 percent probably will not by itself alter the basic demand among workers for qualified plans. Most workers will not be facing marginal tax rates that are much different than those that existed under prior law. Even among the 3 percent of taxpayers whose earnings exceed $75,000, for whom reductions in marginal rates will be most significant, saving through qualified plans will continue to offer a higher rate of return than any alternative. By the same token, however, the lower-rate structure for the upper-income population will shrink their advantage and thereby diminish the gains that can be redistributed to other workers.[27]

The CBO concludes that the combined effect of the pension plan rule changes and the new tax rates on qualified plans may vary. While large plans in the industrial and unionized sectors of the economy will probably not be affected, those among medium- and smaller-sized employers may. The tax and regulatory environment may result in fewer traditional DB plans being established or continued in firms where worker demand for retirement savings is weak. Thrift and salary reduction plans, which allow all workers to sort themselves according to their savings preferences, may become increasingly attractive in firms where some workers seek tax-deferred savings more than others.

#### *2. Extent of Defined Benefit Plan Coverage*

In contrast to the practice of small firms, which typically offer DC plans, almost all large businesses have offered DB pension plans since the 1950s. DB plans now are offered by nine-tenths of large employers, but there is some indication of a small but steady decline in the percentage of large employers with such a plan. The Hay/Huggins Benefit Comparison Survey has reported a steady drop of 1 percent a year in the number of DB plans offered by medium and large firms, from 93 percent in 1979 to 87 percent in 1986.

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[26] U.S. Congress. House. Committee on Ways and Means. Subcommittees on Oversight and Social Security. Pension Plan Underfunding. Hearing, 99th Cong., 2d Sess., June 24, 1986. Testimony of Dallas Salisbury, Employee Benefit Research Institute. Washington, U.S. Govt. Print. Off., 1987. p. 34.

[27] U.S. Congressional Budget Office. Tax Policy for Pensions and Other Retirement Saving. Apr. 1987.

| Year | Firms with defined benefit plans (percent) |
|---|---|
| 1979 | 93 |
| 1984 | 90 |
| 1986 | 87 |

Note.—The Hay/Huggins Benefit Comparison focuses on medium and large employers. Only 4 percent had fewer than 100 employees; 69 percent had more than 1,000 employees.

There are probably many reasons for this trend. First, the group of large employers in the Hay/Huggins survey is a dynamic group and its terminating or merging employers have tended to be replaced by smaller ones. If current smaller firms are less likely than earlier generations to introduce a DB pension plan, as they grow or merge with other firms there may be a continual decline in the prevalence of traditional pension plans.

Second, employers who have plans may be more likely to end the plans for administrative reasons. Pension plan sponsors and employee benefit consultants charge that each new wave of ERISA and tax code changes creates additional disincentives for employers to adopt and maintain DB plans. It is not certain how some of the new changes in the Tax Reform Act of 1986 will be greeted by plan sponsors. Maximum benefits paid out at early retirement have been significantly scaled back. Changes have been made in the way plans can integrate their benefit formulas with Social Security. Some argue that the faster vesting called for in 1989 will make DB plans more like severance pay plans, diminishing their appeal for retaining and rewarding long service workers.

Third, some employers may have terminated their DB plan to recapture "surplus" assets as a result of the sharp increase in funding ratios brought on by recent high interest rates and favorable investment performance. Others may have been the victims of plant shutdowns caused by economic downswings in particular industries.

While some employers in the Hay/Huggins survey dropped their DB plans, the survey shows a sharp and continuing increase in DC plans with a 401(k) feature. In 1982—the year after IRS issued regulations authorizing their establishment—only 3 percent of the firms had such plans, but this increased to 23 percent in 1984 and 62 percent in 1986.

The slight but steady erosion in DB plans found in the Hay/Huggins survey and the sharp rise in supplementary DC plans raise three questions: First, will the mix of retirement plans change enough in the future to move DB plans from their historic role as the primary employer retirement plan? Second, why has the slight erosion of DB plans occurred? Third, does the drop in DB plans reflect a real trend? The decline could be a temporary disturbance or an artifact of one survey, but the DC trend is shown in other studies as well.

Economist Richard Ippolito explored whether DC plans are enhancing or replacing DB plan assets.[28] His examination confirmed the widespread belief that DC plans are becoming a progressively more important component of the private retirement system. He concluded, however, that in general no data suggest that DC plans are replacing DB plans in the long run. Moreover, the data and the theory suggest that there is no logical reason to believe that DB plans will not continue to be the dominant type of retirement plan in the United States. However, he cautions that if workers begin to lose trust in the integrity of DB plans and the "implicit contract" that firms will not voluntarily terminate the pension plan, it may cause a large-scale reexamination of the pension contract. This could lead to a dramatic shift in the relative proportion of assets held by each type of plan.

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[28] Ippolito, Richard A. Pensions, Economics and Public Policy, 1986.

A second effect of shifting to DC plans would be to reallocate employer contributions from long-service workers to short-service workers. First, the allocation of defined contributions is much more uniform than for DB plans, which pay substantially higher amounts for older employees. Second, by practice rather than by legal restraints, DC plans typically have much shorter vesting periods than DB plans.

Thus, the erosion of DB plans shown in the Hay/Huggins data base may be only a temporary result of recent economic trends. However, it must be recognized that the trend, if continued, could substantially and permanently change the mix of retirement income sources. It is very unlikely that large employers will totally abandon DB pension plans, but these plans could eventually become a secondary rather than a primary source of retirement income offered by employers.

### 3. *Tradeoffs Between Defined Benefit and Defined Contribution Plans*

Each type of plan offers distinct advantages and disadvantages to both employees and employers. Many analysts feel that DB plans provide greater retirement income security because the benefits are defined and the employer is responsible for paying for them. If pension assets backing up the retirement claims are insufficient, employers must increase their contributions. A distinct advantge of a DB plan is that it, more easily than a DC plan, can provide past service credit for work performed before the establishment of the plan, and can be altered to meet the pension objectives of the employer. Benefits can also be tied directly to pre-retirement earnings—an important measure of adequacy. Since the employer is legally obligated to provide the benefits promised, employees can plan on receiving a specified retirement income. Further, employers sponsoring DB plans frequently provide post-retirement adjustments in benefits. On average, they have amounted to about one-third of the rise in the Consumer Price Index (CPI). However, increases are not pre-funded and are made at the option of the employer. An important DB advantage is that such plans are insured by the PBGC.

On the other hand, when other factors are taken into consideration, some analysts argue that DC plans are not only desirable, but responsive to the changing economic and demographic environment. DC plans are advantageous to short-term, mobile and younger employees. For example, a DC plan that sets aside a level percentage of pay over an employee's working lifetime will accrue retirement benefits faster in the employee's early years than a DB plan costing the same overall amount. In addition to more rapid benefit accrual, DC plans usually have more rapid vesting schedules and pay death and disability benefits at any point in the employee's working lifetime, rather than only upon satisfaction of certain age and service requirements. Moreover, it is pointed out that models exist for minimizing employee investment risk, and that at retirement an annuity can be purchased with the funds accumulated based on the individual's life expectancy. From that point on the annuity would function like a DB plan.

DC plans are neutral with respect to an employee's decision to stay with or leave a firm for other employment, or on when to retire. However, the design of DB plans is unfavorable for those workers who are laid off or change jobs often, or for those who only spend part of their careers in the workforce. Not only may these persons forfeit benefits because they do not stay on the job long enough to vest, their ultimate benefits may be small. Because of their disproportionately high administrative costs, employers will normally cash them out by offering the employee a lump-sum in cash. Unless these amounts are rolled over into an IRA or otherwise saved, they may not be available for retirement income.

### 4. *"Non-Qualified" Plans*

A result of the 1986 tax law changes may be to increase the importance of "non-qualified" retirement plans. Such plans, which are for highly paid employees, do not enjoy the same favorable tax treatment that qualified plans receive. Employers can use them to exceed the limits on the benefits that can be paid out under a tax-qualified DB plan.

Indications are that non-qualified plans are being used by more and more firms to compensate their highly paid employees. The public policy concern is that employers in the future could scale back what they provide under tax-qualified plans. This in turn could affect middle managers as well as rank-and-file employees, since employers could freeze the tax-qualified pension plan for them and provide deferred compensation to officers and other highly paid employees through non-qualified arrangements.

## G. POLICY OPTIONS

Projections show that even without an increase in the pension coverage rate, future generations of retirees are more likely to receive pension benefits than today's retirees. Moreover, these benefits are expected to be worth more in real dollars. However, this is based on the assumption of a growing economy. Of course, if the economy does not grow as quickly as projections assume, the average level of pension benefits will not be as high as predicted. Although poverty rates are expected to remain relatively high among single aged persons in the bottom quartile, income projections for other aging Americans are encouraging. One option would be to take no action to alter these expected outcomes which depend upon many economic and demographic assumptions.

### *1. Preservation of Defined Benefit Plans*

There is public policy concern over which direction our private pension system is headed. DB plans have been the tradtional way large employers have provided their workers with retirement income. Some analysts are concerned about the future of DB plans. Rules for DB plans have been continually changed over the last 5 years. Legislative options are under study to raise PBGC insurance premiums and to deal with both overfunded and under-funded plans. There undoubtedly will continue to be pressure from interest groups for more ERISA and tax code changes to achieve specific goals. While each of the past changes and many of the proposed changes may achieve desired social and equity goals, it is argued that they all have made pension plans more complex and costly to administer. There are some indications that employers may be shying away from DB arrangements and instead may be placing greater emphasis on DC plans. If Congress wishes to encourage and preserve DB plans and keep them the cornerstone of the private sector retirement income system, it may wish to weigh future legislative changes in terms of their potential affect on DB plans as well as on their own merits.

In addition to exercising care in adding new requirements for plan sponsors, one option would be to ease the regulatory burden in order to help promote DB plans. In this regard, current law rules and regulations could be examined to determine if they can be streamlined and the compliance burdens substantially reduced.[29]

### *2. Strengthening the Pension Benefit Guaranty Corporation*

There is also public policy concern over the financial position of the PBGC. The DB promise assumes a financially sound and equitable termination insurance program. While most plans are fully funded, a small but significant number are seriously underfunded. If these plans were to terminate, it would significantly worsen PBGC's already precarious financial position, requiring DB plans to pay higher premiums.

Under current PBGC forecasts, all funds available to pay guaranteed benefits will be depleted by the end of fiscal year 2003. The need for additional PBGC revenue has led to proposals to replace the uniform premium structure with a system that would charge higher premiums or a variable rate to those employers who do not adequately fund their pension promises. The premiums that PBGC currently imposes are not related to the size, or reasons for, a plan's funding deficiencies. Arguably, these factors, as well as an uncertain global economy, make it possible that the PBGC will become liable for the promises of additional failed DB plans. If so, the premiums imposed on a declining base of DB plan sponsors also would increase. While no evidence yet exists, such a reinforcing cycle eventually could lead to large scale withdrawals from the DB system.

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[29] For example, many have questioned whether the restrictions on individual choice and the compliance burdens imposed by the non-discrimination rules are worth whatever broader social ends they are attempting to achieve. In some firms the rules may have restricted what upper-income individuals can save through qualified plans. In the extreme, the rules may prevent formation of plans in firms where the intrinsic demand among the rank-and-file workers for tax-favored savings is very weak.

Options now being studied include more rapid amortization of certain unfunded liabilities and waived contributions, minimum funding requirements, and limiting the availability and attractiveness of funding waivers. However, these changes could be burdensome for employers in declining industries and might increase resort to bankruptcy. They may also cause a drop in the number of firms willing to maintain DB plans in the future.

### *3. Tax Equity*

Not everyone benefits equally from the estimated $60 billion annual revenue loss from the tax advantages of qualified plans. While these advantages boost retirement incomes, tax benefits are skewed to highly-paid workers and, even more so, to workers who spend 20 years or more under one pension plan.[30] If all workers had equivalent access to tax-advantaged retirement savings over their worklives, then arguably no issues of tax equity would exist. To achieve such equal access, however, would require either relatively open-ended individual retirement savings on a tax-favored basis (for example, large deductible IRAs) or some kind of mandated employer-provided system—at least, universal access to salary reduction plans. Any such solution, however, would create its own problems. For example, large scale IRAs could compromise the goals of the non-discrimination rules. It is also unlikely that low income workers would save even if they had access to a large deductible IRA. Moreover, employers might drop their plans covering rank-and-file workers and let all employees fend for themselves. Further, if a change successfully shifted more retirement savings into tax-favored vehicles, larger revenue losses would occur unless offset by a tax rate increase or reduced expenditures.

### *4. Preretirement Indexing of Deferred Annuities*

Another means to alter the distribution of the underlying benefits and the gains in income traceable to the tax advantages associated with DB plans would be to require a revision in the way the DB plans calculate deferred annuities. If those benefits were based on wages that were adjusted for inflation between the time a worker earns them and the plan's retirement age, then more benefits—including the tax-induced portions of such benefits—would be paid to workers for jobs that they held in early and middle portions of their lives. This would be particularly advantageous for workers who change jobs several times over their work lives. While such a change would not alter the distribution of benefits among income levels, it would change the distribution between stayers and leavers.

Such a substantial revision in DB plans, however, implies either significantly higher plan costs [31] (and, therefore, shifting more current compensation to pension contributions) or a reshuffling of benefits from long-service to short-service workers for the same aggregate plan costs. Either solution would undercut the economic incentives by which DB plans attract and retain qualified workers. Such a change would have to be phased in to avoid large unanticipated additional liabilities to be borne by plan sponsors and the PBGC. As a result, its effects would be only slowly realized and probably would not affect outcomes for most of today's middle-aged workers.

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[30] For a complete discussion see: U.S. Congressional Budget Office. Tax Policy for Pensions and Other Retirement Savings. Apr. 1987.

[31] The Congressional Budget Office estimates that this would increase plan costs by roughly 20–25 percent.

### *5. Greater Reliance on Defined Contribution Plans*

The development of a global economy has made long-term commitments in an increasing number of American industries more problematic. Major industries are now operating in an environment in which their future markets are less secure and their cost structures are undergoing constant reexamination. In light of these changes, it may be unrealistic for workers to count on receiving the large DB benefits implied in their current formulas. Many of these plans may be terminated or substantially reduced well before today's workers reach retirement, thus reducing their retirement incomes. One option is to move to a retirement system that is less dominated by DB plans and make more use of DC plans.

There are also other reasons why it may not be desirable for the Nation to rely heavily on DB plans. Because of their "lock-in" features, DB plans penalize job mobility and pension portability. In accommodating themselves to global markets, other trading nations have found it necessary to encourage job mobility and retraining. On the assumption that job mobility will contribute to increased productivity, one policy option is to design a pension system that minimizes job mobility losses. While the faster vesting requirements scheduled to go into effect in 1989 will reduce forfeitures of accrued benefits caused by job changing, they do not respond to the loss in benefit value caused by preretirement inflation. A shift to greater reliance on DC plans might be a natural response to the post-ERISA legal and economic environment. Moreover, the distributional results might be a desired public policy outcome. In the context of this country's pension structure, options might involve some combination of three measures: (1) more reliance on social security; (2) more reliance on DC arrangements; or (3) a requirement that DB plans index the wages on which they base benefits for workers that leave the plan before retirement.

Analysis is inconclusive about whether DB plans contribute more to economic growth through their lock-in incentives than they discourage growth by limiting job mobility. In future considerations of the Nation's retirement policy, however, these interactions with the larger issues of overall economic growth and international competitiveness need to be studied.

Encouraging employees to delay retirement will offset some of the additional cost resulting from increased life expectancies. DC plans reward delays in retirement, but DB plans reward earliest possible retirement. A study by the National Bureau of Economic Research found that DB pension costs increase as retirement age decreases even if benefits are reduced.[32] Since the reduction, if any, is usually less than an "actuarial-equivalent" reduction, the value of benefits is greatest for the youngest retirees. DC plans do not provide any subsidy for early retirement. In fact, the large increases in the value of DC plan benefits caused by their compounding over additional years of service encourage employees to delay retirement. Thus, DC plans encourage both job mobility and span of years worked.

### *6. Pension Portability*

One option to increase the likelihood that retirement benefits are used for retirement income is to require that the assets remain in the employer's plan until retirement age is reached or to have them transferred to a Federal portability agency or a central clearinghouse. This would eliminate employee discretion over the use of the funds prior to retirement. Another option would be to expand existing retirement arrangements to facilitate or mandate rollovers of preretirement distributions to an individual retirement account or other employer plan. While such a scheme would place constraints on participants' discretion to use preretirement distributions as they see fit, it would provide greater retirement income security. The recent tax law revisions, including the 10 percent additional tax on early distribution of benefits, already serve this same goal.

Legislation has been reported to provide greater assurance that preretirement distributions are "locked-in" for retirement income purposes and to offer incentives for small employers without retirement plans to adopt simplified employer pension (SEP) plans.[33] However, the legislation does not deal with the issues of crediting all service toward an eventual pension or the effects of preretirement inflation on DB plans.

### *7. Mandating Private Pension Plans*

In order to prepare for the aging of the baby-boom generation, some economists urge a national policy that would encourage (or at least not deter) more investment over the next 25 years. This would require an increase in total savings. However, as shown in chapter 4, recent history on total savings is not encouraging. Rather than increasing the rate of growth in productivity or building up claims abroad by exporting more goods and services than we import, we are now doing just the opposite. If Congress wishes to increase overall retirement savings or the role the private sector plays in delivering retirement income, it could reexamine the proposal of President Carter's Commission on Pension Policy to establish a minimum universal pension system (MUPS). MUPS was a direct response to the plateauing of the pension coverage rate at about 50 percent of the workforce. The Commission recommended that employers contribute 3 percent of payroll into a retirement account for each full-time employee over age 25 who had been with the firm at least 1 year. Vesting of contributions was to be immediate.

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[32] Wise, David A. Pensions, Labor, and Individual Choice. National Bureau of Economic Research, 1985.

[33] See the Pension Portability Act of 1987 (H.R. 1961, 1962/S. 944 and the Portable Pension Plan Act of 1987 (H.R. 1992).

While a MUPS proposal has many appealing features, it was estimated that pension coverage would have increased to only 56 percent of the workforce. Moreover, it has been criticized for failing to take into consideration the effects on workers and firms. It is uncertain what the effects would be on small and marginal businesses that generally are least able to afford an additional 3 percent of payroll tax. Moreover, it is thought that many low-income and younger workers—the ones most likely not to be covered by a pension plan—might not desire such a proposal if it would come at the expense of lower cash wages. The general consensus among economists is that pension plan contributions and social security taxes ultimately offset wages paid to workers and are thus a substitute for wage income. It is argued that a more direct way of increasing the retirement income of low-income persons is to increase the role of social security. One way to achieve this through a "cost neutral" approach would be to increase the tilt in the social security benefit formula.

While a MUPS might increase the retirement savings of some, the buildup in retirement assets would not equal the MUPS requirement. Limited empirical data indicate that workers would reduce their other savings, including those already going into pension plans, to offset a substantial portion of the MUPS contributions. Thus, much of the assets accumulated under MUPS probably would be a reallocation of savings. However, to the extent that some workers were now able to obtain tax-favored rates of return on their savings and those tax advantages were financed by higher income tax rates or spending cuts, some increase in net national savings would occur.

## CHAPTER 10. AGING, HEALTH, AND MEDICAL CARE*

### I. INTRODUCTION

Uncertainties about the ability of the aged to pay for medical care during retirement years raises particular Federal policy concerns. Federal policies affecting income needs of future retirees generally focus simply on assuring sufficient levels of cash income. If anticipated future levels materialize, the elderly will likely be able to afford the cost of their housing, food, clothing, and similar goods and services. Medical care needs of the aged, however, are unpredictable and their cost is potentially so large that despite coverage by Medicare for some of these costs, many of the future aged may not be able to pay for it.

The aging of the population and the retirement of the baby boom accentuate pressure on the Nation's future cost and financing of medical care, and on the ability of the elderly to afford it. Some argue that in the past there has been less tradition for saving for unexpected medical care needs in old age than there has been for other retirement living needs, in part, because of Medicare. Surveys show that most elderly Americans think (with some justification) that Medicare will adequately provide for their medical care needs, particularly if they have purchased "medigap" insurance to supplement their Medicare coverage. In fact, Medicare pays about half of average total health care costs for the elderly.

As described in some of the preceding papers and depending on assumptions regarding the future rate of economic growth, it is possible to be relatively sanguine about the Nation's ability to adjust to many of the impacts of the demographic phenomena described in Chapter 2. Health care may be the exception. Even without the large scale future demographic shifts under consideration, issues of the cost and financing of health care rank high on the Nation's legislative agenda. Over the past ten years, the costs of health care have accounted for a large and growing share of the Nation's Gross National Product. The projected long-run financing of Medicare's Hospital Insurance trust fund is seriously out of balance. Major reforms are currently receiving consideration to address these and other issues in the financing and delivery of health care services. The future demographic changes highlight these issues, and make the quest for reforms more urgent.

The potential impact on the health care system of the long-range demographic extends beyond the increasing numbers of persons over age 65. The most rapid growth (already underway) will occur in the population age 85 and over. These so-called "old-old" more often require intensive and expensive acute medical care. In addition, the 85 and older age group is most likely to require long-term health care outside the hospital in the home or a nursing home setting. This group is more likely to suffer from chronic ailments such as dementia or chronic heart disease, ailments for which medical practice can offer little hope for cure, but which may prevent them from living alone and taking care of themselves. At present in this country, insurance for long-term care is not provided by Medicare and generally not provided by private policies. Long-term care for the elderly currently is financed primarily by consumer out-of-pocket payments and through the Medicaid program—the Federal-State program to pay medical costs of certain of the Nation's poor.

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*This chapter was prepared by James Reuter and P. Royal Shipp, Congressional Research Service.

In summary, anticipated demographic changes will intensify pressures for major reforms in the health care system in general, and in Medicare in particular. Demographic forces, interwined with continued concerns about health care costs, the Federal Budget deficits, and with Medicare's benefit structure have created an atmosphere of consensus that changes in the Medicare program will be necessary.

However, little consensus has emerged out of these discussions on what specific changes are needed. Policy-makers differ on whether national policy should encourage more public provision and regulation of services, or whether a strategy of increased reliance on more competitive health-care markets and private financing should be pursued.

## II. THE ELDERLY: GROWING NUMBERS AND INTENSIVE USERS OF HEALTH CARE

The connection between increasing numbers of elderly and pressures on health care expenditures often is emphasized because the elderly as a group use substantially more health care resources per person than the non-elderly. Assuming that current age-specific mortality, morbidity and health care utilization rates continue, the retirement of the baby boom would result in a direct increase in health care expenditures. However, it is not clear whether these assumptions are valid, and this uncertainty raises important policy considerations. While there is general agreement that age-specific mortality rates will decline somewhat, there is a divergence of opinion as to how much these rates will decline. There is even less agreement on how mortality improvements will affect morbidity and health care utilization and expenditures. On the one hand, if age-specific morbidity declines with mortality, health care expenditures would increase simply because there are more elderly. On the other hand, if increased longevity is accompanied by longer periods of increased morbidity preceding death, health care expenditures would grow faster than the growth in the numbers of elderly. In other words, do health care costs increase more or less directly with age, or do the bulk of the costs of the elderly come within a short period preceding death (i.e., the last year of life)? If the latter, then it is the number of elderly, not their longer lifespans, that drives increases in expenditures.

As described in Chapter 2, the population aged 65 and over was 25.5 million in 1980, and is projected to raise to 39.2 million in 2010 (the approximate beginning of the baby boom's retirement) and to

64.6 million in 2030 (when the last of the baby boom reaches age 65). The size of the population 85 and over, which has particular implications for the health care system, is projected to grow at an even faster rate. The 2.2 million in 1980 will rise to 6.6 million in 2010, to 8.6 million in 2030, and to 16.0 million in 2050, (when the youngest of the baby boom cohort reaches age 85). These projections are sensitive to certain assumptions—most importantly to continued declines in mortality rates (increases in life expectancy). In 2050 the highest projection for the population 65 and over is nearly 50 percent higher than the lowest. For the population 85 and over the highest projection is more than double the lowest.

The pressure on health care costs of an aging population occurs because the elderly require more health care per person than the non-elderly. In 1984 the elderly (age 65 and over) represented about 12 percent of the total population but accounted for about one third of national expenditures for health care. Average annual per capita health care expenditures for persons aged 65 and over was $4,200 in 1984. In the same year, the estimated average annual per capita health care expenditures for persons under age 65 was about $1,200.[1]

But important distinctions should be drawn within the 65 and over age group. Health care expenditures of the age group 65 to 70 are about the same as for the younger age groups. However, the old-old group (over age 85) consume substantially larger amounts of health care resources. In 1983, Medicare beneficiaries over age 85 were hospitalized nearly twice as often as beneficiaries between the ages 65 and 69.[2] The old-old are also more likely to develop chronic ailments and to suffer from such debilitating diseases as dementia or emphysema. These ailments may require long-term custodial care, usually in the form of nursing home care. In 1985, about 1 percent of persons ages 65 to 74 were institutionalized in a nursing home while almost 22 percent of persons age 85 and over were institutionalized.[3] Care of patients with severe chronic ailments can be very expensive; the cost of nursing home care is currently about $20,000 to $25,000 per person per year. Contrary to what most people think, the cost of long-term care in nursing homes is not covered by Medicare. Nor does the private sector provide long-term care insurance at a cost affordable to many. As a result, the cost of long-term nursing home care is borne either directly by consumers and their families or, after exhausting their own resources, by Medicaid. Given that the long range population projections suggest that the old-old are not only a growing proportion of the total population but also a growing proportion of the population over 65, these age-specific differences in health care utilization will have major effects on future health care expenditures.

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[1] Waldo, D.R. and Lazenby, H.C. Demographic characteristics and health care use and expenditures by the aged in the United States: 1977-1984. Health Care Financing Review. Vol. 6, no. 1. Fall, 1984. p. 1-29.

[2] Gornick, M., Greenberg, J.N., Eggars, P.W. and Dobson, A. Twenty years of Medicare and Medicaid: covered populations, use of benefits, and program expenditures. Health Care Financing Review. Annual Supplement. 1985. p. 13-59.

[3] U.S. Department of Health and Human Services. National Center for Health Statistics. Use of Nursing Homes by the Elderly: Preliminary Data from the 1985 National Nursing Home Survey. Advance Data. No. 135. May 14, 1987. p. 2.

While the risk of incurring large health-care costs increases with age, the distribution of health care costs within the Medicare-eligible population also varies widely. Studies have shown that 37 percent of aged Medicare beneficiaries received no Medicare benefits in 1983 and an additional 33 percent received benefits between $1 and $500. These two groups accounted for 70 percent of all beneficiaries but only 3.2 percent of Medicare's benefit payments. About one tenth of Medicare enrollees received benefits of $5,000 or more, accounting for 72 percent of total Medicare benefit payments.[4]

Research also shows that Medicare reimbursements during the final 12 months preceding death averaged $4,527 in 1978, while reimbursements to enrollees who survived were $729 per enrollee.[5] Thus, Medicare enrollees in the last year of life use Medicare benefits at a much higher level than do survivors.

Clearly long-range demographic shifts and potential changes in patterns of health care utilization associated with an aging population have serious implications for financing medical care needs of the elderly. However, their effect should be kept in perspective. In the first place, the baby boom cohort does not begin reaching age 65 for nearly 25 years, leaving some time for substantial political and economic adjustment, as well as for innovation and change in medical care practice that is impossible to anticipate.

Second, as noted earlier, two variables, the number of beneficiaries and the nature of services provided, will drive the future rate of increase in real (taking general inflation into account) medical care costs for the elderly. Medicare's Board of Trustees projects future trends in these variables, suggesting that the nature of services provided will affect medical care costs substantially more than mere increases in the elderly population. These projections include implicit assumptions regarding, for example, the impact on expenditures of changes in technology and changes in attitudes about the appropriateness of using "heroic" medical practice in prolong life. Such assumptions are accompanied by a high-degree of risk because the methodology and data for making them are inherently weak. Nonetheless, they do provide guidelines for understanding what the future policy choices are. In particular, while policymakers can do little to change the number of future elderly, policies affecting the nature and patterns of medical services could be established. Health economist, Robert G. Evans, has stated this issue as follows:

> * * * it is not the increasing numbers per se of the elderly which are creating strains on the health care system, and by extension increasing claims by that system on the resources of the rest of society. Rather it is the way in which the health care system reacts to the elderly, the expanding service mix on the intensive and extensive margins, which is creating economic strains as well as serious questions about the effectiveness and the appropriateness of that response.[6]

This point deserves emphasis. Continued mortality improvements do not necessarily result in larger per capita health care expenditures for the elderly. Data on Medicare reimbursement by age do show increasing average costs as age increases. For example, average Medicare expenditures for enrollees ages 85 and over was 86 percent higher than for enrollees ages 65 to 69.[7] If age-specific morbidity and demand for health care resources remain constant, increases in longevity could lead to the conclusion that the projected increases in life expectancy would result in larger health care expenditures. However, an alternative suggests that continued mortality improvements will ensure a larger surviving population at each age group, but also less likelihood of illness or death in any particular age cohort. Accordingly, since dramatic increases in health care expenditures occur during the last year of a person's life, declines in mortality rates could lower the average Medicare costs per enrollee for the younger age groups, and perhaps even overall. As stated by Victor Fuchs:

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[4] Gornick et al. Twenty years of Medicare and Medicaid.

[5] Lubitz J. and Prihoda, R. The use and costs of Medicare services in the last 2 years of life. Health Care Financing Review. Vol. 5, no. 3. Spring, 1984. p. 117-131.

[6] Evans, R.G. Illusions of Necessity: Evading Responsibility for Choice in Health Care. Journal of Health Politics, Policy, and Law. Vol. 10, No. 3, Fall 1985, p. 446-447.

> The relationships between utilization, age, and survival status will depend on the reason for the lkser death rate. If mortality falls because people are living healthier lives or because of more effective preventive measures, the conventional extrapolations will overestimate health care utilization. * * * On the other hand, if the lower death rates are a result of ever more complex technological interventions, the rising cost of such interventions will tend to offset the fact that fewer persons are in the last year of life.[8]

At this time, there is no clear consensus as to which of these conceptualizations will explain the future growth in health care expenditures for the elderly. However, these differing views serve to emphasize the uncertainty regarding these projections and to identify potential areas of policy concern.

## III. RISING HEALTH CARE COSTS AND FEDERAL EXPENDITURES

The United States' systems of health care financing have experienced major changes in recent years. Both public and private insurers are developing new and innovative methods for reimbursing providers. While the nation's health care delivery system has been characterized by independent, fee-for-service practitioners, providers are beginning to organize into large, incorporated groups providing a broad range of health care services.

In large measure, some of these changes are a response to a health care system whose costs rose rapidly relative to prices in the rest of the economy, and whose growth led to the absorption by health care of a growing share of the Nation's production of goods and services since 1965. Many changes were intended to control costs and price increases. In other cases, these changes represent a response by providers to cost containment policies. Based on the latest available data, the overall effects of these changes on health care expenditures are still inconclusive.

From 1975 to 1985, health care expenditures in the United States increased by an average of 12.3 percent per year—a rate far above the growth of the overall economy. During the past two decades (1965–1985) the share of the Gross National Product accounted for by health care spending increased by 81 percent, rising from 5.9

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[7] Gornick et al. Twenty years of Medicare and Medicaid.

[8] Fuchs, V. The Health Economy. Harvard University Press. Cambridge, Massachusetts. 1986. p. 310–331.

percent in 1965 to 10.9 percent in 1986—an historically high level for the United States. (See table 1) This percentage held relatively constant between 1983 and 1985, leading some to conclude that major growth in health care costs as a percent of GNP had abated. However, the 1986 increase suggests continued cost pressure.[9]

TABLE 10.1.—NATIONAL HEALTH EXPENDITURES

| Year | In billions | As percent of GNP |
|---|---|---|
| 1965 | $41.90 | 5.9 |
| 1970 | 75.00 | 7.4 |
| 1975 | 132.70 | 8.3 |
| 1980 | 248.10 | 9.1 |
| 1983 | 357.20 | 10.5 |
| 1984 | 391.10 | 10.4 |
| 1985 | 422.60 | 10.6 |
| 1986 [1] | 458.20 | 10.9 |

[1] Updated data. For source, see footnote 9.

Source: Waldo et al., National Health Expenditures, 1985. Health Care Financing Review. Vol. 8, No. 1. Fall 1986. p. 1-21.

As overall health care costs and prices have risen, so also has the cost of the Medicare program. Between FY 1977 and FY 1987, part A of Medicare, the Hospital Insurance (HI) program that pays for hospital care, has increased by an average of 12.4 percent per year.[10] The rate of annual increase in part A expenditures has declined in recent years, due both to changes in policy and to a decline in overall inflation (see table 2). Part B of Medicare, the Supplementary Medical Insurance (SMI) program that pays for physician and outpatient care, has grown even faster than part A—an average annual rate of increase of 17.0 percent between FY 1977 and FY 1987.[11] These rates of growth translate into major pressures on the Federal budget. The HI and SMI programs together will result in expected Federal budget outlays (adjusted for offsetting receipts) of $65.3 billion in FY 1987—about 7.1 percent of the total budget outlays as compared to 4.7 percent in FY 1977.

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[9] U.S. Dept. of Health and Human Services. Health Care Financing Administration. Office of the Actuary. Division of National Cost Estimates. June 1987.

[10] The Board of Trustees, Federal Hospital Insurance Trust Fund. 1987 Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund. Office of the Actuary. Health Care Financing Administration. DHHS. March 30, 1987. 80 p.

This report will hereafter be referred to as the 1987 HI Trustees' Report.

[11] The Board of Trustees, Federal Supplementary Medical Insurance Trust Fund. 1987 Annual Report of the Board of the Trustees of the Federal Supplementary Medical Insurance Trust Fund. Office of the Actuary. Health Care Financing Administration. DHHS. March 30, 1987. 69 p.

This report will hereafter be referred to as the 1987 SMI Trustees' Report.

TABLE 10.2.—EXPENDITURES FOR MEDICARE: PART A AND PART B

| Fiscal year | Part A (HI) (in millions) | Annual percent change | Part B (SMI) (in millions) | Annual percent change |
|---|---|---|---|---|
| 1977 | $15,207 | | $6,342 | |
| 1978 | 17,862 | 17.5 | 7,356 | 16.0 |
| 1979 | 20,343 | 13.9 | 8,814 | 19.8 |
| 1980 | 24,288 | 19.4 | 10,737 | 21.8 |
| 1981 | 29,260 | 20.5 | 13,228 | 23.2 |
| 1982 | 34,864 | 19.5 | 15,560 | 17.6 |
| 1983 | 38,624 | 10.8 | 18,311 | 17.7 |
| 1984 | 42,108 | 9.0 | 20,372 | 11.3 |
| 1985 | 48,654 | 15.6 | 22,730 | 11.6 |
| 1986 | 49,685 | 2.1 | 26,217 | 15.3 |
| 1987 (estimate) | 49,000 | −1.4 | 30,543 | 16.5 |

Sources: 1987 HI Trustees' Report and 1987 SMI Trustees' Report.

Health care cost increases in recent years have been caused by an interaction of several forces. Overall inflation accounted for the largest part of the health care cost increases. In addition, however, increased case loads (particularly in Medicare) and more intensive treatment per case have caused costs in health care to go up faster than general inflation.

The methods of paying both physicians and hospitals, by Medicare as well as by private insurers, have made it difficult to contain the rapid growth in the health care sector and annual increases in its costs. For the most part, both Medicare and private insurers pay physicians on the basis of fee-for-service charges. That is, physicians are paid a price set by them, within some limits, for whatever procedures or services they perform—also largely determined by the physician. Before FY 1984, hospitals were paid for the costs they incurred—so-called retrospective cost reimbursement. Under this payment system, hospitals had no incentive to control costs as they would be paid whatever costs they incurred. Thus, financial incentives acted on both doctors and hospitals to encourage costly care.

In response to continuing pressures on health care costs, reforms in Medicare's payments to hospitals were made as part of the Social Security Amendments of 1983 (P.L. 98-21). These amendments replaced Medicare's retrospective cost-based hospital reimbursement system with a prospective payment system (PPS). Under PPS, hospitals are generally paid a fixed amount for treating a patient, with the amount varying depending on the diagnosis, regardless of the actual cost of the treatment or the length of the hospital stay.

Many policy-makers believe that Medicare's method of paying physicians also needs reform. While the Congress has not enacted comprehensive reform to Medicare's physician payment system, it has taken steps, in the context of annual budget legislation, to implement changes designed to reduce the growth in budget outlays for physician services. In particular, in 1984 (P.L. 99-369) the Congress enacted a freeze on Medicare payments for physician services. In addition, the Congress instituted a "participating physician" program to encourage physicians to accept Medicare's allowed charge as the full payment for a treatment, and to collect from the patient only the 20 percent co-insurance amount and not any difference between the doctors' billed amount and Medicare's allowed charges. The Congress continues to explore other possibilities for more comprehensive reforms in the way Medicare pays physicians.

Private employers have also taken actions to reduce their costs of employee health care. Over the past 10 years, employers have become increasingly concerned as rising health care costs drove up the cost of employer-paid health insurance and at the same time became an ever larger component of overall employee compensation. Privately insured individuals, no less than Medicare beneficiaries, generally did not have to face the full economic consequences of their health care treatment because insurance often was paid for largely by employers and payments for services were made directly to hospitals and physicians by insurance companies and other intermediaries. In recent years, private employers have begun to assert more control over employee health care costs by requiring employees to pay more for their health care, encouraging employees to participate in prepaid medical plans where the plan sponsors have strong economic incentives for efficient use of resources, establishing relationships with organizations of physicians and doctors who agree to provide health care at reduced rates, and hiring organizations to manage care by, for example, requiring second opinions for elective surgery and monitoring the duration of hospital stays.[12]

Many employer-sponsored health plans include the provision of some health insurance benefits after retirement. While these benefits were not costly when they were originally included in the plans (because there were few retirees in the early years), they have major implications for future costs as the number of retirees increases. Also, as these plans are generally designed to supplement Medicare, their costs are sensitive to changes in this program. At present, retiree health benefit plans represent a large and growing future liability to employers. These future obligations have not been funded and thus will have to be paid from current funds in the years they become due. Only rough estimates currently exist for the size of these future obligations—ranging from $100 billion to much higher figures, depending on assumptions of the future cost of health care and possible changes in Medicare.

In summary, major changes in health care and its financing are being driven by rapidly rising health care costs and a health care sector that has represented an increasingly large proportion of the Gross National Product. The Federal and State Governments have taken actions to hold down expenditures because of the pressures of the Medicare and Medicaid programs on their budgets. Private employers have also responded to increasing health care costs by implementing various cost-containment strategies.

Data suggest that changes in Federal Government and private sector policies have slowed down health care cost increases in recent years, at least temporarily. However, the combination of the aging of the population, inefficiency in health-care practices, and additional technological innovations in health care will place continuing pressures on the health care system, its costs, and its financing.

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[12] Meyer, J.A., Sullivan, S. and Bagby, N.S. Health Care Today: Issues, Trends, and Developments in Cost Management. National Chamber Foundation. Washington, D.C. 1986. 49 p.

## IV. CONTINUED PRESSURE FOR MEDICARE REFORM

The past two decades have produced continued change and evolution in the American health care system—changes driven by issues of cost, coverage, and financing. These same issues will keep Medicare and health care issues on the legislative agenda in coming years.

Concerns about the elderly and the poor led to the enactment of Medicare and Medicaid in 1965. However, the current Medicare program has been criticized because it does not pay for long-term care, preventive care, prescription drugs, and certain other health care services required by the elderly. As the population ages, these gaps in coverage will become more visible, particularly Medicare's lack of catastrophic insurance for acute care and lack of long-term care coverage.

The current imbalance in Medicare's Hospital Insurance (HI) trust fund will, by itself, require legislative corrections. If current projections, considered overly optimistic by some analysts, are realized, the trust fund appears adequate to pay benefits for the next fifteen years. But, it will be depleted a year or two after the turn of the century (still several years before the baby boom begins reaching retirement age).

Much of the uncertainty about the future of health care and Medicare is caused by uncertainties about the future course of health care costs. Projected demographic changes and continued changes in health care technology and the nature of health care services will constitute continued upward pressures on health and costs. Responding to these pressures the percent of the Gross National Product going to the health care sector rose steadily in the United States before apparently leveling off at an historically high rate of 10.7 percent in 1985. Recent analysis suggest a renewal of high rates of growth in health care costs in relation to GNP. It has been reported that health care expenditures will rise to 15 percent of the GNP by the year 2000.[13] No one can say what an upper limit might be, but a health care sector absorbing an ever increasing share of the Nation's production of goods and services, particularly in times of slow economic growth, would heighten pressures for additional cost control measures.

### A. ISSUES OF COVERAGE

Since the program's inception, Medicare's benefits have been targeted toward providing financial protection for the costs of acute health care needs of the Nation's elderly. The program provides little protection against the costs associated with chronic illness. Concerns relating to the adequacy of program coverage for the long-term care of chronic illness will become more pronounced as both the numbers and percentage of the old-old population (persons over age 85) continue to grow. In view of both budgetary considerations and the status of the Medicare trust funds, it has long suggested that a combined public sector/private sector solution may be the most appropriate and realistic response to existing program gaps.

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[13] Spector, M. Health Bill Seen a 15 percent of GNP by Year 2000. Washington Post. June 9, 1987. p. Al.

The original Medicare program, modeled after private health insurance plans for younger, employed populations, was designed to meet the acute health care needs of the elderly. The acute care focus is evidenced in the benefit design of the part A and part B programs with fairly extensive coverage of short-term hospital stays and coverge of a significant portion of the costs of physician and other outpatient services. At the same time the program offers less adequate protection against the costs of many other services frequently used by the elderly. Overall, Medicare covered only 48.8 percent of the aged's health care costs in 1984.[14] The program's benefit package excludes a number of services used by a large portion of the elderly population (and now often covered by many employer-sponsored health insurance plans); namely prescription drugs, routine eye examinations, eyeglasses, hearing aids, dental care, and dentures.

In addition, Medicare offers little protection against expenses of long-term care, in particular nursing home care and custodial home care services required by chronically ill persons over an extended period of time. The range of chronic illnesses and conditions resulting in the need for long-term care services is extensive. Unlike acute care illnesses, which occur suddenly and are usually resolved in a relatively short period of time, chronic conditions are of an extended duration and may be difficult to treat medically, except to maintain the status quo of the patient. Conditions that may require long-term care include heart disease, stroke, arthritis, and vision and hearing impairments. Dementia, the chronic and often progressive loss of intellectual function, is also a major cause of disability and need for long-term care. At least half, and perhaps as many as 70 percent, of patients with dementia have Alzheimer's disease, a chronic progressive neurologic degeneration of unknown cause, which increases in prevalence with advanced age and for which there is currently no effective treatment.

To the extent that Medicare covers the services that might be needed by chronically ill patients, it does so only where a need for short-term skilled nursing care is required. Medicare coverage of nursing home care, for instance, generally is limited to short-term post-hospital stays in skilled nursing facilities (SNFs). As a result of this restriction, Medicare covered only 2 percent of the nursing home costs of the aged in 1984.[15] Home health care is covered only when the beneficiary can be shown to need intermittent skilled nursing care or physical or speech therapy. Many chronically ill persons do not need skilled care to remain in their homes, but rather custodial care and assistance with daily routine (such as shopping, cooking, cleaning) or other basic self-care functions (such as bathing or dressing). A beneficiary needing only this kind of assistance cannot qualify for Medicare's home health care benefit.

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[14] Waldo and Lazenby. Demographic characteristics and health care use and expenditures by the aged.

[15] Ibid.

The combination of cost-sharing charges for covered Medicare services coupled with the potential for high out-of-pocket payments for uncovered services has led the majority of Medicare beneficiaries to purchase private insurance coverage to supplement the program's benefit package. This protection, frequently referred to as Medigap coverage, is purchased by nearly 70 percent of aged Medicare enrollees. Some Medicare beneficiaries have Medigap type coverage as a retirement health benefit. About 15 percent of low-income beneficiaries are also covered by Medicaid (the Federal state program for certain low-income individuals, including the aged and disabled). About 20 percent of Medicare beneficiaries have no other health insurance coverage.

The principal protection offered by the majority of Medigap policies is coverage of Medicare's deductibles and coinsurance charges. Some policies also provide protection against the costs of hospital stays exceeding Medicare's coverage limits; however, few policies cover charges above Medicare's reasonable charge amount on claims for physicians services. Some Medigap policies cover a limited number of additional services such as prescription drugs. In general, Medigap policies do not provide coverage for long-term care.[16]

For those Medicare beneficiaries also eligible for Medicaid benefits, Medicaid generally pays the cost-sharing charges for Medicare covered services. However, the primary Medicaid benefits used by dual eligibles are for long-term care nursing home care—either provided in SNFs or in intermediate care facilities (ICFs). Medicaid has become, by default, the primary source of financing for long-term care services in this country. In 1984, Medicaid financed 42 percent of the nursing home care for persons over age 65.[17] In fact, many beneficiaries do not become eligible for Medicaid benefits until after they become institutionalized and reduce their incomes and resources to the Medicaid eligibility standards through expenditures on long-term care.

According to the CBO, spending for long-term care has grown rapidly in recent years, driven by many of the same factors that have pushed up acute-care costs. In 1986, total public spending for long-term care is expected to amount to about $27 billion, or 0.6 percent of GNP.[18] Medicaid will account for about $20 billion of the total, with the Federal Government paying about 55 percent of that cost. Remaining public spending for long-term care is accounted for by Medicare, programs funded under the Social Services Block Grant to states, Veterans' Administration health care, Older Americans Act programs, and resources provided by states and localities out of their own revenues. Private spending for long-term care—an amount roughly equal to public spending—is almost all paid out of pocket by patients or their families, rather than through the private insurance mechanism that is often used for acute care. In addition, many services are provided without reimbursement by family members or by other informal caregivers.

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[16] It should be noted that Medigap policies may increase Medicare expenditures. That is, by eliminating beneficiaries' out-of-pocket expenses for deductibles and coinsurance payments, beneficiaries may use more services than they would in the absence of such coverage, increasing Medicare's costs.

[17] Waldo and Lazenby. Demographic characteristics, health care use, and expenditures by the aged.

[18] Penner, R.G., Director, Congressional Budget Office. Statement before the Subcommittee on Economic Resources, Competitiveness and Security Economics, Joint Economic Committee. July 31, 1986.

According to the CBO, demand for long-term care services will almost certainly increase steeply in the decades ahead as the number of "old elderly" grows. While less than 2 percent of all people between the ages of 65 and 74 reside in nursing homes, 7 percent of all 75-to-84 year olds and more than 20 percent of all those age 85 or older live in such institutions. Thus, the expected doubling in the number of 75–84 year olds between now and the year 2050, and the projected six-fold increase in the number of people over 85, portend a potentially enormous increase in the demand for long-term care.[19]

Private insurance policies for long-term care, while growing in number, are not widely available nor affordable by large numbers of the elderly. Of the existing long-term care policies, most provide indemnity benefits, generally for nursing home care, that pay a fixed amount for each day of covered service. Home care benefits, especially those related to custodial care; are less common. Plans that provide any coverage for home care may require a prior stay in a skilled nursing facility. This limits benefit payments for home care and helps to keep the premiums for these policies affordable. However, this benefit structure does not assist persons who have not been institutionalized and for whom home care services might delay the need for admission to a nursing home.

Coverage gaps in both Medicare and supplemental policies are reflected in out-of-pocket expenditures by the elderly for health services. In 1984, average per capita health care spending for the aged was $4,202. Of this amount, $1,059 (or 25.2 percent of the total) represented out-of-pocket payments by the elderly, that is payments not met by third-party payment sources such as Government programs or private insurance.[20] These out-of-pocket figures do not include the additional amounts spent by the elderly for payment of part B premiums ($214.80 per year in 1987) or private insurance (i.e. Medigap) premiums. Out-of-pocket payments by the elderly have declined as a percentage of total health payments since the inception of Medicare (dropping from 53.2 percent in 1966 to 25.2 percent in 1984).[21] However, average out-of-pocket payments (including insurance premiums) as a percentage of average income is estimated to be the same as that recorded before the start of the Medicare program—15 percent in both 1966 and 1984.[22] Assuming continuation of past trends, out-of-pocket expenses for the elderly will continue to represent a significant financial burden.

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[19] Ibid.

[20] Waldo and Lazenby. Demographic characteristics, health care use, and expenditures by the aged.

[21] Gornick et al. Twenty years of Medicare and Medicaid.

[22] Ibid.

## B. FINANCIAL IMBALANCES IN THE HOSPITAL INSURANCE (HI) AND SUPPLEMENTARY MEDICAL INSURANCE (SMI) TRUST FUNDS

Financing for Medicare's hospital insurance (HI) program (part A of Medicare) was designed so that HI benefits (primarily payments to hospitals, but also including payments to SNFs, hospices, and home health agencies) are financed by HI trust fund revenues that come from a portion of the payroll tax on current workers. However, current projections from the program's actuaries show this pay-as-you-go method of HI financing to be badly out of balance. Average projected outlays from the trust fund would greatly exceed average HI payroll tax revenues over the next 25 years. HI financing is even more unbalanced if program costs and revenues are projected for 75 years.

Currently, HI payroll tax revenues exceed outlays. However, under the Health Care Financing Administration's (HCFA's) intermediate (IIB) demographic and economic assumptions, this favorable condition exists only through 1994. After that the relationship reverses (outlays exceed revenues) until 2002 by which time the trust fund balance will have declined to zero. If HCFA's more pessimistic economic and demographic assumptions develop, the trust fund would be depleted as early as 1996.[23]

Part B of Medicare pays for other non-institutional health care services, principally physician services. This part of the program is called Supplementary Medical Insurance (SMI) and its benefits also are paid from a trust fund. Unlike HI however, the SMI trust fund currently receives 75 percent of its funding from the general revenues of the Treasury. The other 25 percent is financed by beneficiary premiums. The SMI trust fund receives direct appropriations from the general fund and thus does not face the issue of trust fund depletion in the same sense as the HI fund. Nevertheless, in another sense, the SMI program can be considered to be financially imbalanced because its rate of growth exceeds that of the growth in general revenues.

### *1. HI Trust Fund Depletion*

Over the past three years, concern about financial problems in Medicare's Hospital Insurance (HI) program shifted from the program's imminent trust fund depletion to its impact on the Federal budget deficit. Two changes in Medicare's financial environment explain this shift. First, official 1985 and 1986, and 1987 projections were much more optimistic regarding the status of HI's trust fund in both the short and the long run than earlier projections had been. Furthermore, concern over the Federal budget deficit intensified and pushed issues of Medicare's effect on the budget deficit and the economy to center stage—moving earlier concerns over imminent trust fund depletion (now thought to occur further in the future) to the back burner. The focus of concern may be different, but there is a direct relationship between Medicare's effect on the budget and its trust fund status. Program or financial changes in Medicare made to shrink the budget deficit (either additional revenues or smaller outlays) also shore up the trust fund, both in the short and the long run.

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[23] 1987 HI Trustees Report.

After several years of projecting the imminent depletion of Medicare's HI trust fund, the program's Board of Trustees have revised their projections to show an improved short-run financial status. According to the most recent estimates of the Board of Trustees, if intermediate (IIB) economic and demographic assumptions prevail, the HI trust fund will be depleted in 2002. Only four years ago, this Board had projected depletion several years earlier—in the late 1980s. Despite an improved financial status, a trust fund deficit remains when projected surpluses and deficits are averaged over a 25-year period. According to the most recent projections, trust fund revenues will exceed expenditures from now until 1994, building up a surplus of $102.7 billion. Beginning in 1995, projected program expenditures will exceed annual trust fund revenues. Each year that expenditures exceed revenues the trust fund balance declines—going to zero in 2002.[24]

One reason for trust fund improvements is Medicare's new policy for paying hospitals, which has given Federal policy makers and legislators more control over Medicare expenditures. Rather than paying hospitals for whatever reasonable costs were incurred in treating Medicare patients, as was done from the program's beginning in 1965 until October 1, 1983, Medicare now pays a prospectively-determined amount for each patient based on the patient's diagnosis. Since these prospective payment levels are fixed on a per case basis, declines in the rate of admissions and increases in the payment rates of less than had been expected have improved the projected financial basis of the trust fund in the long run as well as the short run.

While the focus of concern has shifted for now from trust fund depletion to budget deficit reductions, the issue of the HI trust fund's financing will arise again, if only to address its insolvency in 2002. The long range (25 and 75 year) projections suggest the extent of this financing problem.

The HI portion of Medicare is financed by the payroll tax. The current tax rate for employers and employees combined is 2.9 percent of the taxable payroll (payroll subject to the Social Security tax). Current law does not presume future increases in this tax rate (although the amount of earnings subject to this tax is indexed). Financial adequacy is defined by the relationship between the revenues generated by this payroll tax and program expenditures; the program is said to be in "actuarial balance" (which defines financial adequacy) over a specified time period if, on average, payroll tax revenues are sufficient to meet obligations. Based on this criterion, the HI program is insufficiently financed in the long run. Over the next 25 years (1987-2011), the average contribution rate is projected to be 2.9 percent of taxable payroll (current law). Average HI program expenditures over this same period, expressed as a percentage of the taxable payroll, are projected to be 3.34 percent, leaving a difference between revenues and costs (the actuarial balance) of −0.44 percent.[25]

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[24] Ibid.

[25] Ibid.

In fact, a financial "imbalance" has existed in HI almost from its earliest years. Projections made in 17 out of 21 years since the program's enactment have shown negative actuarial balances over 25-year periods. These imbalances were corrected by periodic and rather modest payroll tax increases until the late 1970s and early 1980s. Subsequent years of rapidly rising medical costs coupled with slow economic growth produced projections for widening imbalances between program revenues and expenditures. The largest imbalances in the program's history appeared in the projections made in 1982; the level of revenues projected over 25 years was only 60 percent of the projected cost of the program. Had the 1982 projections been realized, the HI trust fund would have gone to zero in the late 1980s. Since that time the projected 25-year imbalance has declined, postponing, but not eliminating the program's projected demise.

These 25-year projections (through the year 2011) assume continued increases in life expectancy, but they do not show the impact of the demographic shifts in the population after 2010 when, with the retirement of the baby boom generation, the number of Medicare beneficiaries increases sharply. The oldest baby boomers reach age 65, starting in about 2010, and this will put even more pressure on the Medicare program. Even assuming that the amounts hospitals are paid for treating Medicare patients increasing only as rapidly as increases in payroll taxable earnings, the changing relationship between eligible beneficiaries and working-age workers greatly worsens Medicare's projected financial imbalance after 2020.

The financial imbalance in HI is deep, and its growth continues over the actuaries' 75-year projection period. Using the mid-range (IIB) assumptions, average HI program costs over the 2011-2036 period (during the baby boom retirement) is projected to be nearly twice program revenues. At the present payroll tax rate of 2.9 percent, the actuarial balance is -2.59 percent of taxable payroll. Between 2037 and 2061, the period after the baby boom cohort has completely retired and is reaching age 85, program costs are expected to be 2⅓ times the current-law tax rate.[26] If HI expenditures and revenues grow according to more pessimistic assumptions, the ratio of costs to revenues will be even greater.

Projections are only as valid as the assumptions on which they are based. While the IIB projections of the actuaries are based on assumptions that they feel are most likely to represent what will actually happen, some analysis have suggested that some of these assumptions may be too optimistic, leading to underestimates of the long run financial imbalance in the HI trust fund.[27] For Example, the actuaries assume that productivity growth (linked to growth in the taxable payroll and thus to trust funds revenues) will increase from its current level (averaging 1.5 percent per year between 1966-75 and 0.9 percent between 1976-85) to 2.1 percent by 2010 and then remain constant thereafter. In addition, the acturaries assume an increase in total fertility (from the 1.8 total fertility rate prevailing between 1976-86 to 2.0) and a slower decline in the age-sex-adjusted death rates (from an average of 1.9 percent per year between 1968 and 1983 to 0.6 percent per year over the 75 year projection period).

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[26] Ibid.

[27] Holahan, J. Palmer, J.L., Medicare's fiscal problems: an imperative for reform. Unpublished paper. February, 1987.

The purpose of this analysis is not to issue dire warnings. Rather it is to emphasize that current projections show the financing of the HI program badly out of balance. Even under Social Security's most optimistic assumptions, legislative action will likely be required to shore up the program's finacing it it is to provide the baby boom with a comparable level of benefits when they retire as current retirees receive.

### *2. Financing of Physician Care under Medicare*

The Supplementary Medical Insurance (SMI) program, part B of Medicare pays for physician and other medical services. The SMI program also has been described as financially imbalanced. However, SMI's financial difficulties are defined altogether differently from those of the HI program. While SMI also pays benefits through a trust fund, its financing source is not the payroll tax but beneficiary premiums, (which currently account for 25 percent of program costs) and annual appropriations from general revenues (which account for 75 percent).[28] Unlike the HI trust fund, which accumulates revenues to finance future HI benefits, the SMI program and trust fund is financed on a "pay-as-you-go" basis. The difference in HI and SMI financing was built into Medicare at the programs' enactment in 1965.[29]

Current law requires general fund appropriations sufficient to maintain SMI trust fund solvency. Accordingly, there will be no SMI trust fund depletion crisis as in HI. However, SMI payments are increasing more rapidly than the growth of general revenues and this constitutes an imbalance in the program's financing that is similar to the HI imbalance. While long-run projections are not available for the SMI program, there is little reason to believe that its growth will be less than the HI program's. SMI's growth is expected to exceed growth in the general revenues and the general economy. Accordingly, SMI will account for a growing share of the Federal budget and of GNP over time. The Congressional Budget

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[28] Premium income was originally intended to finance 50 percent of the part B program's costs. However, beginning in 1973, the annual percentage increase in the premium was not allowed to exceed the percentage increase in social security cash payments. As medical care inflation exceeded inflation in the general economy, this limit caused the proportion of the program costs paid by beneficiary premiums to decline to less than 25 percent by 1983. A temporary provision of law has required that for 1984-1988, the part B premium will be calculated so as to produce revenues equal to 25 percent of the program costs of the aged.

[29] It is not known why HI, but not SMI, was included in the "social insurance" system (compulsory participation, payroll tax financed, etc.).

According to Martha Derthick [in Policymaking for Social Security, the Brookings Institution, Washington, D.C., 1979, p.332] the distinction arose because the Hospital Insurance bill, being promoted by the Ways and Means Committee Chairman Wilbur Mills to be payroll-tax financed and part of the social insurance system, did not include any provision for insurance to pay for physician services. An alternative bill, sponsored by Representative John Byrnes, included both hospital and physician insurance, but was not financed by the payroll tax. Mills merged his proposal (and the Administration's) for payroll tax financed hospital insurance with the physician insurance provisions of the Byrnes bill. The Byrnes proposal became part B of Medicare, financed by a combination of general revenues and premiums. The politics of the issues, rather than substantive programmatic differences, caused different financing techniques to be enacted. Chairman Mills through general fund and beneficiary financing for physician payments would be more acceptable to the American Medical Association and would forestall pressures for such coverage under the social insurance system, a controversial idea that Mills thought could endanger the HI program.

Office has estimated that outlays for the SMI program, net of beneficiary premiums, will grow from 0.5 percent of the GNP in 1986 to 0.7 percent in 1992.

The long-range effect of SMI's financial imbalance will be the same as the HI trust fund imbalance on the ability of the economy to accommodate health care needs of the elderly as the population ages and the baby boom retires. Furthermore, programmatic rationale may not support the current different financing arrangements between Medicare's HI and SMI Programs—significant in considering options for change.

### C. CONTINUED COST INCREASES

Future demographic trends will create substantial upward pressure on health care expenditures. As the population ages, utilization will increase because, all else being equal, elderly persons have more physical problems and illnesses. The elderly tend to make greater use of some types of expensive technologies. For example, the incidence of heart disease increases with age, leading to a greater use of such technologies as cardiac catheterization and open heart surgery. In addition, elderly persons suffer more from chronic diseases that consume large amounts of resources. Overlaid on this pattern of increasing demand as the population ages is the recent pattern of growth in prices. Since 1965 health care prices generally have increased more rapidly than prices in other sectors of the economy. For example, the medical care component of the CPI has increased faster than the overall CPI in ten of the last twelve years.

Research at the Health Care Financing Administration (HCFA) has examined the components of increases in national health care expenditures over a recent ten-year period. As shown in figure 10.1., 55.6 percent of the increase in health care expenditures between 1974 and 1984 was due to inflation in the general economy. Inflation in the health care industry in excess of overall inflation contributed an additional 13.6 percent to the growth in expenditures. Population growth contributed 7.9 percent. Growth in real services per capita accounted for 22.9 percent of total growth in expenditures. This last category consists of a variety of factors that are not measured separately, including the effects of technological change, shifts in the types of services rendered, and increases in per capita utilization of services such as increase due to changes in the age distribution of the population.[30]

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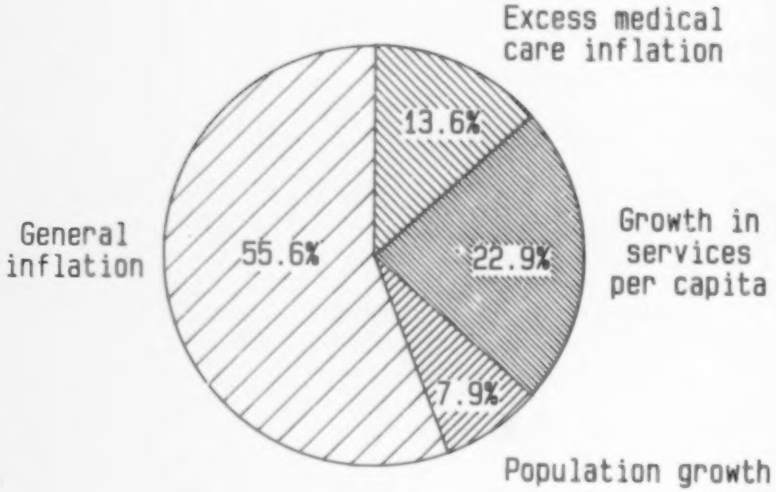
[30] Arnett, R.H., McKusick, D.R., Sonnerfeld, S.T. and Cowell, C.S. Projections of health care spending to 1990. Health Care Financing Review. Vol. 7, No. 3. Spring, 1986, p. 1-36.

Figure 10.1
Components of Growth in
National Health Expenditures:
1974-1984



Source: Health Care Financing Administration

The last component, growth in real services per capita, encapsulates one of the major problems of controlling health care expenditures into the 21st century. That is, this component of growth in health care expenditures will reflect the changing demographics of the population. An aging population may create a shift toward more expensive services and technologies, and will increase in per capita utilization. As the population ages, this component may become the dominant force in the growth of national health care expenditures.

Recent experience suggests the magnitude of the problem ahead. Real health care costs (adjusted for inflation) have grown rapidly since 1965. However, studies by the Health Care Financing Administration have noted that demographic changes (population aging in particular) accounted for only a small proportion of the real growth in per capita services. The principal demographic phenomenon during this period was the aging of the baby boom into their mid-life years. And although the middle age cohort (now occupied by the very large baby boom) demonstrates low average health care expenditures per capita, real costs per capita rose during the entire period because of the growth in services. Thus, this growth in per capita services reflects a general trend in health care toward providing more, and more intense and expensive services. Even without demographically induced changes in utilization, this pattern would imply health care expenditures consuming an ever growing portion of the economy. As the baby boom enters retirement, demographic forces will reinforce this trend and accelerate growth in real services per capita. As a result, this component of growth may become the dominant force behind the growth in future expenditures. Clearly, the major policy issues for controlling health care expenditures as the baby boom ages will be driven by pressures from growth in and cost of services per capita.

## V. POLICY RESPONSE

Projecting the status of the medical care system and the needs of the population for services in 30 or more years is a more complex problem than projecting the status of cash programs such as the Social Security program. Projections for both types of programs are based on assumptions of population growth and economic conditions. In addition, actuaries and other projections of the health care system assume specific changes in services delivery, in the cost of medical care relative to the rest of the economy, and in the impact of technological and behavioral change on mortality, morbidity and the types of services provided. Furthermore, the current status of the health care system does not represent a stable point from which projections can be made. The health care system is currently in a period of rapid change—change that could either ease or exacerbate the problems that will have to be faced in the future.

However, if we leave aside the issue of the detailed accuracy of the projections, the overall trends suggest that, barring unforeseen breakthroughs in medical science, the policy issues raised by the retirement of the baby boom are similar to the problems facing the health care system today. The future demographic trends simply exacerbate the seriousness of the problems and emphasize the need for solutions. Health care prices and expenditures are currently rising faster than prices and growth in the overall economy. Our current health care delivery systems are not as efficient and effective as some analysts believe they could be. Due to gaps in coverage, long-term care is currently a major financial burden on the families of the chronically ill. Medicare's HI program is adequately financed only through the end of this century, with a worsening financial imbalance extending indefinitely into the future. These issues create pressures on the economy, as well as on our health care financing and delivery systems—pressures that will increase as the population ages.

The problems aren't new and neither is the search for solutions. Recent changes in the health care system testify to efforts in both the public and private sectors to control health care costs. Growth of the health maintenance organization industry, declines in hospital use by both elderly and non-elderly populations, and the recent, apparent stabilization of health care costs as a percentage of the GNP suggest that these efforts are having some effect. With respect to publicly financed programs, Congress has made substantive changes to Medicare and Medicaid since 1981—most importantly, the enactment of the Prospective Payment System for reimbursing hospitals in 1983. These changes have been important in controlling program costs. But despite their cumulative effects, there is a consensus that additional, perhaps major, changes in Medicare and Medicaid will be necessary to achieve the competing objectives of meeting the health care needs of the elderly and controlling the cost of these programs to the Federal Government. Gaps in program coverage, looming depletion of the HI trust fund, and continued upward pressure on health care costs combine to give impetus to the need for program reform.

Consensus may be near on the need for Medicare program change, but there is less consensus on the form that such reform should take. Specific proposals for change range from modest to major overhauls of Medicare, and from increased emphasis on private sector solutions to expanded Federal responsibilities. Within this broad spectrum, however, the current Federal fiscal situation dampens support for proposals that would require substantial additional Federal expenditures for improving health care for the elderly.

The recent report to the President on catastrophic illness expenses by the Department of Health and Human Services expresses the dilemma faced by policy-makers. This report identifies catastrophic illness expenses, particularly for the elderly, as a serious national problem and then goes on to say:

> Unfortunately, no immediate resolution of this problem is possible without the infusion of large sums of Federal monies. Given current budget constraints this is not a feasible solution. Longer-term private sector partial solutions are feasible. However, decisive action is needed now if we are to have these mechanisms in place in time to address the enormous public policy crisis that the baby boom generation will present when they become the elder boom in ensuing decades.[31]

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[31] U.S. Department of Health and Human Services. Catastrophic Illness Expenses, Report to the President. November, 1986. p. ii.

The following brief review of policy responses to adjust the health care financing and delivery systems to the problems created by the retirement of the baby boom is not intended to be comprehensive. Rather, its focus is on issues of health care for the elderly. But implicit in this discussion is the recognition that issues of elderly health care arise from and may be resolved through changes in the overall health care system. Accordingly, this policy response section begins with a general discussion of issues related to defining an appropriate Federal role. This section then considers three types of changes in the health care system thought by some to be important in making it more efficient. These three are alternative health care delivery systems, options to reduce and control utilization of health care services, and options that control the impact of health care technology on cost.

This general discussion will be followed by a brief description of three recent proposals for changing the Medicare and Medicaid programs. These options have been chosen because they represent a range of possible approaches to program change. They include options that would be directed at Medicare's HI trust fund depletion; and option that would change Medicare to include catastrophic insurance for acute care and would rely on private sector incentives for providing the more expensive long-term care; and an option that would perform radical surgery on Medicare and Medicaid, building into the program explicit long-term care coverage and making basic changes in the way Medicare pays physicians and hospitals. It would utilize both competitive forces and increased Federal regulation to create incentive and pressures for more efficient and less costly health care.

## A. THE FEDERAL ROLE

The aging of the population and the retirement of the baby boom will raise many issues relating to the cost and financing of health care. These issues include controlling the cost of health care services, establishing an adequate financial base for the Hospital Insurance program, and filling the gaps in existing coverage (i.e., lack of catastrophic and long-term care benefits) while providing the elderly with financial protection against the high cost of illness. One question that will have to be addressed in resolving each of these issues is what is the most appropriate Federal role? This question is of particular importance in the current environment of concern over the Federal budget and efforts to control costs.

The responsibility for financing health care services for the elderly currently is shared between public programs (Medicare and Medicaid) and the private sector. Medicare is responsible for financing many acute care services for the elderly. Medicaid, jointly financed by Federal and State governments and administered by the States subject to Federal guidelines, finances health care services including long-term care for qualified low income elderly persons. Private employers (through retiree health benefit plans), private insurers (through sale of Medigap policies), and individuals (through out-of-pocket payments) provide the remaining financing. On the other hand, the health care delivery system is made up, almost entirely, of private institutions and professionals. This mixture of public and private responsibilities for the financing of health care services is unique among industrialized nations. In other countries, national govenments finance the vast preponderance of all health care, exerting national control over both the benefits and cost of health care provided to all citizens.

Given this dispersion of responsibilities, what role should the Federal government play in the future financing and delivery of health care services for the elderly? In the past, increases in the Federal role often have been designed to increase access to certain health insurance benefits. A Federal program, such as Medicare, makes nationally uniform benefits available to the largest number of individuals. A Federal program also spreads the financial risks of the benefits across the largest possible number of persons (either tax payers or beneficiaries). Part A of Medicare, for example, spreads its financial burden across all workers through the HI payroll tax. Federal and State programs can also establish benefits when the private market fails to respond to the needs of certain groups. For example, the Medicare and Medicaid programs were enacted as a recognition of the failures of the private sector to provide access to adequate health insurance for the elderly and the poor.

On the other hand, public programs may have significant budgetary effects. Existing budgetary constraints and inadequate financing of the HI program may preclude any increases in benefits that are not financed through new sources of revenue. In addition, public health care financing programs have not always been able to provide benefits while controlling costs. These increasing costs are due to several factors. First, Federal health care financing programs (Medicare and Medicaid) have been designed as open-ended entitlements; that is, there is no upper limit to the potential demand (and therefore cost) for the benefit. Second, the provision of a benefit may remove or limit the financial barriers that otherwise limited demand for the benefit, thereby increasing utilization and costs. This factor has often been cited as being of particular concern with respect to providing a long-term care benefit. Third, the reimbursement methodologies used by public sector programs to pay for benefits have not encouraged cost-effective delivery of the services. For example, the retrospective cost-based reimbursement used by Medicare to pay hospitals prior to 1984 and the charge-based fee-for-service system used to pay physicians have been criticized as encouraging increases in the cost and use of services. These factors suggest that any proposal for expanding the Federal role will have to address the issues of how to meet the conflicting objectives of providing beneficiaries with increased financial protection while limiting the impact on the Federal budget.

Given a perceived need for a particular benefit, there are a variety of approaches that have been used in the past and may be adopted in future proposals. Which approach should be used in any particular case depends on many factors including the nature of the problem, the target population, and the potential budgetary impact. Nor are the alternatives mutually exclusive. For example, some employers, Medicare and individually purchased supplemental health insurance policies all provide health benefits for the elderly; some elderly persons may use all three sources of coverage.

Thus, some policy options may simply shift the boundaries between these participants. That is, expansion or reduction in Medicare's benefits may lead to a reduction or expansion of the burden on employers and private sector insurers. The issue of this shifting boundary recently has been raised with respect to providing a catastrophic benefit under Medicare. Under one catastrophic health insurance proposal, Medicare would have been expanded into areas of coverage currently provided by private Medigap policies, substantially reducing this market.

Policy alternatives have often been categorized along dichotomous lines—competitive versus regulatory or public versus private sector approaches. However, the options never fit neatly into these categories. What may be regulatory on one level may stimulate competition on another. This discussion will avoid these simplistic terms whenever possible.

As one option, the Federal government could decline to accept any role. That is, the Federal government would rely on the States and the private sector to provide the benefit. For example, while there are few private long-term care insurance policies currently available, there has been an increasing interest in the development of such policies. It has been argued that if these policies are both desired by consumers and economically viable, private insurers will respond to the demands of the market place to supply the product. The disadvantage of this approach is that while in the long run it may provide benefits to some high income individuals, it also may leave a large number of persons who are not financially well off without such benefits. As a slight modification of this approach, it has been suggested that the Federal government could indirectly assist certain private sector activities. For example, support of research activities could remove some of the uncertainties associated with a long-term care benefit. Alternatively, the Federal Government could develop and operate a "model" plan. For example, the Secretary's Report to the President on Catastrophic Illness Expenses suggested that the Federal Employees Health Benefit Program could offer a long-term care insurance option to federal employees that would serve as a model for the development of private sector plans.[32] The Office of Personnel Management responded to this suggestion and has proposed that certain employees could convert a portion of their life insurance benefit to provide limited long-term care protection.

As a second alternative, the Federal government could adopt policies that would explicitly encourage or mandate certain actions. Examples of the use of this approach in the past include tax incentives and regulations of employee benefits (e.g., the Employee Retirement Income Security Act, or ERISA) that have encouraged the provision of employer-based health insurance for current workers and the establishment of pension plans. These policies place the major financial burden of the benefit on employers, although the government may share in the cost through tax expenditures. This approach has the advantage over the first option of providing somewhat broader accessibility to the benefit and at lower "group" rates. This approach also may allow for some flexibility in the design of the benefit such that employers could structure the benefit to meet local needs. However, unless participation is mandatory for both employers and employees, a potentially large number of persons could remain uncovered. In addition, there is a growing concern that imposing additional burdens on employers may adversely effect the "competitiveness" of U.S. products in international markets.

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[32] U.S. Department of Health and Human Services. Catastrophic illness expenses, report to the President. November, 1986. p. 83.

A third alternative, and the most complex, is for the Federal government to provide the benefit. In practice, this would probably imply expanding or restructuring the Medicare and Medicaid programs. This alternative is the most complex because it includes a wide range of potential activities and involvement. On the one extreme, the government could act simply as a financing conduit, using its taxing power to spread the financial burden as broadly as possible while leaving the administration and provision of the benefit to the private sector. Examples of this approach include the so-called "voucher" proposals for Medicare. Under these proposals, Medicare beneficiaries would receive a "voucher" that could be used to purchase health insurance in the private market. Proponents of this approach argue that this would remove the government from the business of providing health insurance while allowing for competition and flexibility between plans that could lead to lower costs and the development of policies that better meet the needs of the elderly. On the other extreme, Medicare and Medicaid could be expanded into broadly based "national health insurance" plans, modeled after the plans in most other developed countries, with uniform national benefits and tightly controlled fee schedules for services.

Between these two extremes lies current practice, a mixture of policies. In some cases (e.g., PPS), current practice represents an "administered pricing system" wherein the government (acting as prudent purchaser) sets the prices it will pay for certain benefits. Sometimes, public policy relies on private sector developments (e.g., HMOs) to increase the options available to public beneficiaries. In other cases, public policy has simply adopted the systems developed in the private sector with limited modifications (e.g., Medicare physician reimbursement.)

A detailed exploration of the advantages and disadvantages of each of the different roles that may be adopted by the Federal government is beyond the scope of this paper. The intent here is simply to point out the range of alternative roles that have been used as guidelines for the development of future policy. This discussion also provides a broader context for the following sections that present a more detailed description of specific policy responses to the problems created by the future retirement of the baby boom on this nation's health care financing and delivery systems.

### B. ALTERNATIVE DELIVERY SYSTEMS

Alternative delivery systems (ADSs) are private organizations of health care providers that provide services to enrolled members. The most common form of alternative delivery systems is the health maintenance organization. Federal legislation passed in

1982 has encouraged Medicare use of the concept of ADSs. This approach is consistent with the idea of increasing competition in health care system as an incentive for more efficient and cost-effective care. Proposals replacing standard Medicare with a voucher system, an idea promoted by the Reagan administration and others, usually rely, in part, on increased use of ADSs.

To some extent, the recent rapid growth in health care prices and expenditures is caused by the structure of the current methods of financing and providing health care services. For example, fee-for-service payment with limited beneficiary cost-sharing gives providers a financial incentive to overutilize services, as they receive an additional payment for each separate service at minimal cost to their patients. Dissatisfaction with these incentives has led to design of alternative structures and delivery systems for insuring and providing health care services that encourage more cost-effective and efficient delivery of needed services while maintaining the standards for quality of care. In addition to their potential for reducing the cost of care provided under their control, such delivery systems also may compete with providers in the traditional fee-for-service delivery system, thereby encouraging greater effectiveness and efficiency throughout the health care industry.

In general terms, ADSs are privately sponsored health care delivery organizations. In some aspects of their operations, they resemble traditional health insurance plans. That is, ADSs provide a specified scope of benefits to enrolled members who are charged a periodic premium. However, ADSs have special contractual relationships with hospitals, doctors and other health care institutions and providers that distinguish them from the traditional fee-for-service delivery system. The agreements between the ADS and the providers usually specify that the providers will be paid for services rendered to plan enrollees in some fashion that differs from traditional reimbursement methodologies. These alternative reimbursement schemes may include: salaries, negotiated fees or rates, modified fee-for-service, and discounted fees. In addition, providers contracting with an ADS generally must agree to participate in the plan's utilization and cost control programs. These programs may include case management schemes wherein primary care physicians are responsible for managing all of the care received by patients assigned to them, second opinion programs, preadmission screening prior to admission to a hospital, selective referrals to participating providers, and utilization review.

The structure of ADSs can vary considerably. In some cases, participating providers may accept some financial risk for the cost of care of patients under their supervision. An ADS may require enrollees to seek care from participating providers (so-called "lock-in" provisions). ADSs may be sponsored by insurance companies, employers, health care institutions (e.g., hospitals), or groups of providers. They may be for-profit or not-for-profit. They may own their own facilities or contract with existing providers and institutions to provide services.

The special reimbursement schemes and utilization and cost control programs may give ADS the potential for reducing the cost of health care. Through selective contracting, for example, an ADS can direct its enrollees to low cost, high quality providers. These plans can also negotiate financial relationships with providers to reduce or eliminate the financial incentives for over-utilization that exist in the fee-for-service system. The utilization and cost control programs also may help the ADS to reduce unnecessary utilization and costs while maintaining quality of care. These plans may increase competition into the health care system. For example, ADSs could compete with traditional health insurers by lowering premiums (as result of lower costs) or by offering expanded benefits for the same price.

On the other hand, increasing use of ADSs raises certain issues. If the financial incentives to control utilization are too strong, ADS enrollees could be denied access to necessary services. In addition, ADSs (health maintenance organizations in particular) have generally enrolled younger employed populations, and it is not clear whether their potential advantages will transfer to caring for an elderly, less-healthy population.

The most common forms of ADSs are health maintenance organizations (HMOs) and Preferred Provider Organization (PPOs, also referred to as Preferred Provider Arrangements or PPAs).

HMOs are the oldest form of ADS in operation today. The first HMOs were established in the 1930s. Nationwide, there are over 400 HMOs providing services to nearly 20 million subscribers. The term "health maintenance organization" generally describes an entity that provides a specified scope of health benefits to an enrolled population for a prepaid, fixed payment. Until recently, HMOs had enrolled only a small number of elderly persons. Under Section 1876 of the Social Security Act, as amended in 1982, federally qualified HMOs, and Competitive Medical Plans or CMPs (generally HMOs that are not federally qualified) are eligible to contract with the Secretary of DHHS to provide services to Medicare beneficiaries on a risk-sharing or so-called capitation basis. Currently, 152 plans have entered into risk-sharing contracts and are providing care to 914,000 Medicare beneficiaries. Under a Medicare risk-sharing contract, the plan at minimum must provide Medicare's current scope of benefits. These contracts are "risk-sharing" because the per enrollee capitation payment to the plan is prospectively determined. If the capitation payments are insufficient to cover the cost of providing care to a plan's Medicare enrollees, the plan loses money; the plan can keep any profits if its actual costs are below its revenues.

While some, including the Reagan administration. favor expanding Medicare's risk-contracting program, others are more cautious. There is concern that some HMOs may be making excessive profits by restricting access to care or by reducing the quality of care. In addition, the methodology used to set the level of the capitation payments may not accurately reflect HMOs costs of providing services. If the payments are too high, Medicare will not realize any savings. If the payments are too low, HMOs will either be discouraged from participating, or be forced to reduce access and quality of care to their aged enrollees. While there is disagreement over the extent of these problems, Congress may debate whether existing regulation of these plans provides adequate assurances that the elderly are well served before agreeing to any significant expansion of the risk-contracting policy.

PPOs are a relatively new type of alternative delivery system. The first PPOs were established around 1980. Compared to HMOs, much less is known about the number of PPO plans, how many members they serve, their organizational structures and financial relationships. The information that exists suggests that there is substantial variation in the design of PPOs.

In certain respects, PPOs have some characteristics in common with HMOs. That is, they provide a specified scope of benefits to an enrolled population through contracting hospitals and physicians. In other respects, PPOs are more similar to traditional health insurance plans than to HMOs. PPO coverage includes traditional cost-sharing provisions, usually requiring both deductible and coinsurance payments. Payments to providers, and thus member cost-sharing, is modeled on the fee-for-service system. Unlike HMOs wherein non-premium member cost-sharing is minimal, PPO non-premium cost-sharing liabilities increase as utilization or the cost of care increases. In addition, PPOs generally do not impose any lock-in requirements on their members. PPOs may vary the level of cost-sharing as a function of whether or not the provider rendering the service is participating in the PPO. For example, the coinsurance rate could be 15 percent for services rendered by participating providers and 25 percent for non-participating providers.

There have been other attempts over the past few years to develop alternative approaches to the financing, organization and delivery of health care benefits. These efforts have spawned a bewildering variety of terms and acronyms that often are not clearly defined or distinguished from existing models.

One such approach is an employer sponsored health insurance or health benefit organization. Some employers offer their Medicare eligible retirees a Medicare supplemental insurance policy (i.e., a Medigap policy) that covers Medicare's deductible and coinsurance requirements. These policies may also cover some additional benefits, such as prescription drugs. Some employers believe that they have developed effective strategies for controlling the costs of their health benefits plan for active employees. These employers argue that they would be able to reduce the total cost of care for their retirees using these same techniques, if they were given greater control over the utilization and expenditures of their Medicare eligible retirees. This has led to proposals, including a proposal in the Administration's FY 1988 budget, that would provide for Medicare capitation payments to employers who agree to provide certain minimum benefits and who accept the financial risk of the cost of such benefits.

### C. REDUCING UTILIZATION

There is a wide variety of approaches (including HMOs and PPOs) that could be used to establish control over patterns of care could lead to a reduction in utilization. Two such approaches are so-called "gatekeeper" systems and promotion of cost-effective patterns of care.

Under a "gatekeeper" system, providers (generally primary care physicians) are given the responsibility for all of a patient's care. The physician acts as a "gatekeeper," controlling referrals to specialists and hospitals. If this gate-keeping function is combined with financial responsibility as in health maintenance organizations, the physician has the explicit financial incentive to control both utilization and the total cost of care. The risk of this approach is that the gatekeeper would also have a financial incentive for underservice; that is, the gatekeeping physician may elect to provide the care or treatment himself, when a referral to a specialist would be more appropriate.

A variety of "gatekeeper" systems are currently being explored or implemented. Health maintenance organizations and other types of alternative delivery systems (see discussion of alternative delivery systems above) often make use of this concept. Some State Medicaid programs have experimented with systems wherein patients who have over utilized services in the past are assigned to a particular physician who then coordinates all aspects of that person's health care.

The second approach to reducing utilization is to promote the use of effective patterns of care. This idea is based on the observation that there currently are large geographic variations in patterns of care. For example, studies by Wennberg showed that the likelihood that a woman in Maine would have a hysterectomy by the time she reached 70 years of age ranged from a low of 20 percent in one community to a high of 70 percent in another.[33] There may be justifiable medical explanations for this variation, but some observers have interpreted these variations as indications of inefficiencies in patterns of care. It has also been suggested that these variations exist due to the lack of definition as to what the most appropriate care is. That is, when there is disagreement among physicians as to the best approach for treating a particular problem, there will be large variations in practice patterns.

According to some, these variations identify opportunities for improving both the quality of care and for reducing the number of procedures that are performed inappropriately. However, before these theories can be translated into specific actions, much more needs to be known about reasons for practice pattern variations. This suggests a policy option of support for research that (1) identifies problems with substantial geographic variations in treatment patterns, and (2) determines what the most appropriate care should be. If successful and the results were widely disseminated, these efforts could provide a double benefit: quality of care would be improved, and utilization patterns would be more cost effective.

### D. CONTROLLING THE COST OF TECHNOLOGY

Technological change is believed by many to have contributed to the rising cost of health care in recent years. Technological change is not necessarily cost increasing—falling prices in the computer industry are a prime example of how technology can reduce costs while increasing capacity. However, technological change in the health care industry has often increased costs. In some cases, the technology itself has been expensive, such as in the case of computerized imaging systems (e.g., CAT scanners). In other cases, technology may have added to costs by opening up new areas of treatment (e.g., organ transplant technology).

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[33] Wennberg, J.E. Dealing With Medical Practice Variations: A Proposal For Action. Health Affairs. Vol. 3, no. 2. Summer, 1984. p. 6–32.

From a public policy perspective, attention should be given to developing ways of controlling and directing technological change. This effort can take several forms. First, there is a need to develop guidelines for the use of new and expensive technologies. For example, while sophisticated imaging systems may provide a better image, it is not true that this necessarily leads to a change or improvement in treatment. Guidelines to identify when the use of these systems is appropriate could reduce instances when the more expensive technology was utilized with little additional benefit. The notion of controlling the spread and use of expensive technologies is not new. On the Federal level, health planning and certificate of need legislation represents one approach that was tried, with mixed results.[34] A second approach is to limit reimbursement under Federal programs to facilities that meet specified standards. This approach is in the process of being implemented under Medicare to limit reimbursement for heart transplants to selected facilities that meet volume and quality standards. However, these approaches have been controversial in that some believe they represent Federal intrusions into the health care system to address issues that could be resolved in the private market.

Incentives for the development and use of cost reducing technologies should also be explored. It has been suggested that the reimbursement system in use during the 1970s encouraged the use of any technology, whether cost increasing or cost decreasing. While the implementation of Medicare's PPS system for paying hospitals has changed this incentive for hospital-based services, the incentives for indiscriminate use of expensive technologies in other settings should be examined. Alternatively, some portion of the Federal health research budget could be directed toward research and development that would insure that more cost-reducing technologies would be developed and made available for use.

### E. STRENGTHENING HI'S TRUST FUND FINANCING

The depletion of HI's trust fund still looms as a serious issue that will have to be resolved. The air of crisis of only a few years ago is no longer evident. This is due, in part, to Congressional actions (such as holding down the rate of increase in payments to hospitals) that have delayed the depletion of the trust fund by over 10 years. However, it must be recognized that this has been achieved during a period of relatively constant growth in the beneficiary population. It is doubtful whether such evolutionary tactics will provide an adequate financial base in the face of the much higher growth in numbers of beneficiaries that will occur with the retirement of the baby boom. Thus, it is likely that the long-range financing of HI trust fund may have to be addressed directly, either by itself or in the context of overall Medicare reform.

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[34] Federal health planning legislation was recently repealed (P.L. 99-660) due, in part, to concerns over the cost and effectiveness of these programs.

The 1982 Advisory Council on Social Security, chaired by now-Secretary Otis Bowen, addressed the HI funding issue.[35] At that time, HI's funding imbalance was viewed as a high priority, near crisis problem. The preface to the Advisory Council's report, issued in 1984, refers to the need to "restore [Medicare's] financial position." It mentions the "imminent financing crisis in the Hospital Insurance trust fund", and promises a "plan to rescue a program with a projected multi-billion dollar deficit." Most of the recommendations in the report were directed toward improving the HI trust fund's financing. Given the dire outlook prevailing at the time of the report, it is not surprising that the Advisory Council emphasized recommendations that would strengthen the HI trust fund's financing in the short run. Their recommendations regarding the financing issues are presented here as examples of how the financing issues could be addressed, even though this package of proposals may be out of date and was never seriously considered as a whole.

The Advisory Council recommended interfund borrowing among the trust funds for Hospital Insurance, Old Age and Survivors Insurance and Disability Insurance—not as a permanent source of funds, but in case it were needed to deal with a very short run crisis.[36] Others have suggested the possibility of financing the projected HI trust fund shortfall by transferring fund balances from the OASDI fund (which will be growing rapidly over the next 20 years) into the HI trust fund. This could avert a short run funding crisis in HI, but it would have no effect on the overall Federal budget deficit, would do nothing to control health care costs, and would leave the OASDI program with a long-run funding shortage of its own.

The Advisory Council report emphasized that its most important goal was to solve the short run funding crisis then considered to be imminent. The Council followed this finding with recommendations not to use general revenues nor an increase in the payroll tax as ways to shore up the fund's financing. Additional revenues to the trust fund were proposed, but from other tax sources. For example, the Council endorsed what was then a Reagan Administration proposal to consider part of an employer's contribution to employee health benefit plans as taxable income to the employee, and to earmark an "appropriate portion" of the additional Federal revenues to the HI trust fund. The Council also recommended increasing the Federal excise taxes on alcohol and tobacco, with the revenues again earmarked for the HI trust fund.

The Council also endorsed the provisions for universal Social Security already included in the Social Security Amendments of 1983 (enacted before the Council report was released). This extended Social Security to new Federal workers (who already had been covered by HI and were paying the tax), and to all employees of non-profit organizations. Further, it repealed an option for State Governments to withdraw from social security after choosing to participate in the program. A proposal not recommended by the Council is to extend mandatory HI coverage to all State and local Government employees nearly all of whom (estimated 94 percent) will become eligible for HI upon reaching age 65 anyway by virtue of a spouse's eligibility or because of their own part-time or other work outside the State Government employment system. This proposal, in a modified form, was enacted in COBRA (P.L. 99-272) which required that all State and local government employees hired after April 1, 1986 are required to participate in the HI program. It has been projected that, in part as a result of this provision, 99 percent of State and local government employees will be paying the HI tax by 2005-07. While further amendments along these lines would not have much effect on the trust fund's revenues after 2007, the Administration's FY88 budget included a proposal to cover all State and local government employees (including those hired before April 1, 1986), effective January 1, 1988. This proposal would increase the near-term revenues to the HI fund (between $9 and $10 billion by 1992, depending on the estimate), delaying somewhat the projected date of insolvency of the fund.

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[35] Advisory Council on Social Security. Medicare Benefits and Financing, Report of the 1982 Advisory Council on Social Security. DHSS. December 31, 1983. 310 p.

[36] Authority for such interfund borrowing was enacted in the Social Security Amendments of 1983 (P.L. 98-21). This authority expires at the end of calendar year 1987.

As an alternative to increasing trust fund revenues by expanding its tax base, decreasing the number of beneficiaries would lower expenditures and thus also improve the trust fund's status.

The Social Security Amendments of 1983 gradually advanced the age of full retirement benefits under OASI from 65 to 67 by the third decade of the next century. A major cost saving recommendation of the 1982 Advisory Council was to follow the lead of the OASI changes and recommend increasing the age for Medicare eligibility from 65 to 67, but much more rapidly, reaching 67 in 1990. This proposal has not been enacted.

The Council considered the question of long-term care under Medicare, but sidestepped it by agreeing only that the issue deserved further study:

> The growing cost of hospital and nursing home care has promoted studies of the costs and cost-effectiveness of care delivered in alternative settings by both the public and private sectors. Some studies have shown that targeting the population offered home care services as an alternative to institutionalization is a more efficient and appropriate way to deliver care. The Advisory Council on Social Security suggests that in developing a comprehensive long-term care program, the Secretary of Health and Human Services be guided by the results of these studies.[37]

The Advisory Council report included other recommendations. Those described above were not enacted are included here to demonstrate the kind of concern that arose at that time about the HI trust fund status, and the type of changes contemplated to deal with them.

### F. CATASTROPHIC HEALTH INSURANCE

Proposals for catastrophic health insurance have received considerable attention in recent years. Catastrophic protection would place an upper limit on out-of-pocket beneficiary liability in connection with a specified package of services—either the Medicare benefit package or an expanded services package. Some proposals would provide this protection for the elderly by amending the Medicare program.

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[37] Ibid. p. 56.

Generally, the catastrophic proposals that have been offered for the Medicare population would build on the existing Federal program. There are basically two broad categories of catastrophic proposals for this population group. The first category would place an upper limit on beneficiary liability for Medicare deductibles and coinsurance; these proposals would also eliminate the durational limits on covered hospital services. Under this type of proposal, no catastrophic protection would be provided in connection with uncovered services. Assuming this coverage were instituted on a mandatory basis, it would have the effect of spreading the risk of catastrophic care over the entire Medicare population of 32 million beneficiaries. It would be relatively easy and inexpensive to administer. The major impact of this apprach is that it could, in large measure, supplant existing Medigap policies offered by private insurance companies. However, this approach would not address the major catastrophic concern of the elderly, namely the need for protection against the costs of long-term institutional care. If, as in many of the current proposals of this type, the benefit is fully financed through beneficiary premiums, there would be little, if any, effect on the long range financing of the Medicare program.

The second broad category of catastrophic coverage would attempt to provide protection against some of the costs associated with services not covered under the Medicare program. Some, though not all, proposals would include long-term care expenditures in the benefit package. Several proposals would restructure the current Medicare program offering, for example, expanded services through an HMO or other Alternative Delivery System. If the coverage included long-term care, the future retirement of the baby boom would have a significant effect on the long range cost of the catastrophic benefit that would have to be considered.

A number of issues have been raised with regard to catastrophic/expanded benefit proposals. These include whether the Federal Medicare program should be altered from its current acute care focus, and if so how; and the appropriate role of both the public and the private sectors. A key concern is how to pay for a catastrophic/expanded benefit package and whether Federal general revenues should be used to finance some of the cost. Also of concern is whether and how an expanded benefit package would mesh with implementation of other reform options.

In his February 1986 State of the Union Message, the President asked the Secretary of DHHS to examine the issue of catastrophic protection for all age groups (not just the Medicare population) and report recommendations to him by the end of the year. The Secretary appointed a Private-Public Sector Advisory Committee on Catastrophic Illness to examine the issues. That Committee reported to the Secretary in August 1986 outlining the policy options and indicating its support for a shared public-private sector response. The Secretary transmitted his report to the President in November 1986.[38] With respect to the elderly population, the report recommended that Medicare be restructured to provide catastrophic protection in connection with covered Medicare services. The benefit would be financed with an actuarially sound premium, adjusted annually, to be paid by beneficiaries in addition to the current part B premium.

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[38] U.S. Department of Health and Human Services. Catastrophic Illness Expenses, Report to the President. November, 1986. 117 p.

The report to the President also considered private sector options for funding long-term care services. Private sector alternatives for financing uncovered services have received considerable attention recently, especially in the context of long-term care services for the elderly. A number of private sector approaches have been suggested as potentially feasible alternatives for financing long-term care. These options include: private insurance, life care communities, and conversion of an elderly homeowner's equity into a source of funds to pay for care. Individual retirement accounts (IRAs) for medical services and other savings arrangements have also been suggested as approaches for financing long-term care expenditures. These options appear to provide only limited opportunities for alternative financing schemes for long-term care. In addition, they seem to have only limited applicability for the large numbers of elderly who are poor or those who may be poor in the future.

At the time of this report, the House Committee on Ways and Means, House Committee on Energy and Commerce, and Senate Finance Committee have approved bills (H.R. 2470 and S. 1127) providing increased coverage for catastrophic health care expenses under Medicare. While these bills have some significant differences, they suggest the general structure that Congress may follow in providing such coverage.

H.R. 2470 limits out-of-pocket expenditures for part A covered services in three ways. First it limits beneficiary liability to a maximum of one hospital deductible per year and eliminates durational limits, hospital coinsurance and spell of illness provisions. Second, it requires coinsurance charges for the first 7 days of an SNF stay instead of the current law requirement of coinsurance charges on days over 20. Third, it transfers the home health benefit to part B. H.R. 2470 also places a $1,043 cap on beneficiary out-of-pocket expenditures under part B (for 1988). The cap would be indexed to the Social Security COLA after 1989. Expenditures counting toward the cap are the part B deductible and 20 percent coinsurance, the blood deductible, and $250 of reimbursable out-patient mental health expenses. The additional part B benefits are financed by a small increase in the monthly part B premium ($1 in 1990 and $1.50 thereafter) and by an income related premium collected through the income tax system. This tax is to be adjusted annually to reflect increases in the cost of the benefits.

S. 1127 establishes for all part B enrollees an annual cap of $1,700 (for 1988) on out-of-pocket expenses incurred under both part A and part B. In addition, for part B enrollees the bill limits liability to a maximum of one hospital deductible per year and eliminates duration limits, hospital coinsurance and spell of illness provisions. The bill requires coinsurance charges for the first 10 days of an SNF stay for part B enrollees, and extends the number of covered SNF days from 100 to 150. The bill also expands part A hospice and home health benefits for all part A beneficiaries. All medicare deductible and coinsurance charges count toward the cap.

Expenses for immunosuppressive drugs, and a limited number of mammography and colorectal exams also count toward the cap, even when they are not covered benefits. The catastrophic benefits are financed through an increase in the part B premium ($4 per month, with future increases linked to increases in the cost of the catastrophic benefits but limited by increases in Social Security benefits), and an income related premium collected through the income tax system. After initial implementation, the premiums are indexed such that the new benefits are fully financed by these additional sources of revenue.

At this time, both bills have sidestepped the issue of catastrophic costs for long-term care services, calling for studies of the issue. Nor do these bills count certain out-of-pocket expenses for covered services, such as charges in excess of allowed amounts on unassigned claims, toward their respective caps. These bills also suggest the types of compromises for financing additional benefits that may characterize future attempts to expand Medicare's benefits. That is, the benefits are provided at no additional burden on existing federal general revenues or on existing trust fund resources. The burden is spread among beneficiaries, but in such a way that low-income individuals receive improved financial protection with little additional premium liability, at the expense of higher income beneficiaries.

### G. COMPREHENSIVE MEDICARE REFORM

Over the years, proposals have been advanced that would radically reform the Medicare program. They seek to remedy perceived inefficiencies and design problems with the current services provided under Medicare (i.e., gaps in program coverage—long-term care most importantly). Through amendments to the Medicare program, such proposals can be designed to deal with most of the problems identified above in providing health care to the elderly. For example, comprehensive Medicare reform might include:

—Making catastrophic insurance (including long-term care) part of Medicare.

—Strengthening Medicaid so that it does a better job of serving the poor.

—Restructuring the financing of Medicare by combining the financing of parts A and B, and by explicitly designating percentage general of total program costs to come from the payroll tax, from general revenues, and from beneficiary payments.

—Reforming Medicare's payment system for paying physicians.

—Reforming the way Medicare pays hospitals to yield better incentives for efficient operations.

—Creating new incentives for controlling costs through increased use of alternative delivery systems.

As noted, various proposals have been advanced for such comprehensive reform and it can be expected that others will be considered in coming years. A recent review of current proposals suggests the impact (modest to revolutionary) of existing reform proposals on both the benefits and financing of Medicare.[39] They differ on the age at which individuals would become entitled to benefits (ranging from a low of 62 to a high of 70) and on the basis of entitlement (linked to cash programs or all persons over specified age). The proposals also represent a wide range of potential benefit plans. In one case, existing benefits are reduced to finance certain additional (catastrophic) benefits. In other cases, the benefits are expanded to include prescription drugs and long-term care. The proposals are financed by a variety of sources including premiums paid by beneficiaries (sometimes means tested or income related), taxes paid by the general population (income, payroll or excise taxes), savings (i.e., medical individual retirement accounts), or by combining the financing from existing programs (i.e., Medicare and Medicaid).

While the components of the existing proposals could be used as building blocks for even more proposals, they also serve to identify the basic issues and tradeoffs (between changing benefits and financing) that will have to be addressed if Medicare is to be adapted to meet the needs of the elderly in the future. These include:

—should Medicare eligibility continue to begin at age 65, or at younger or older ages?
—should Medicare's existing benefits be expanded or reduced?
—should Medicare's cost-sharing be expanded or reduced?
—should Medicare's benefits, cost-sharing or coverage limits (i.e., catastrophic coverage limits) be means-tested or income related?
—how, if at all, should public programs (Medicare and Medicaid) be structured to provide appropriate long-term care coverage?
—how much new revenue, if any, will be needed to finance Medicare's current and future benefits?
—how much of Medicare's future obligations should be prefunded (such as through the HI trust fund) and how much should be financed on a pay-as-you-go basis?
—how much of Medicare's costs should be financed by the general population (general revenues and earmarked taxes) and how much by enrollees (premiums and cost-sharing)?

Answering these questions will be difficult. However, the impending retirement of the baby-boom increases the need to find answers that will place the Medicare program on a firm financial basis and that will continue to provide the elderly (and low-income elderly in particular) with acceptable levels of financial protection against the cost of illness. While greater than projected economic growth would make these decisions easier, continued growth in health care costs will make them more difficult. That is, how the long-range issues arising out of the retirement of the baby-boom should be approached depends, in part, on whether or not the short-range objective of controlling care costs can be achieved.

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[39] Etheredge, L. Redesigning Medicare: A Comparison of Benefit and Financing Reform Proposals. Prepared for the National Health Policy Forum, Washington, DC, March, 1987. 73 p.

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